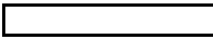


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January 1965


**EVALUATIONS OF SOVIET
SURFACE-TO-SURFACE
MISSILE DEPLOYMENT
16TH REVISION**

**A Report of the Deployment Working Group
of the
Guided Missile and Astronautics Intelligence Committee**

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PREFACE

This report, published bimonthly by the GMAIC Deployment Working Group (DWG), provides a comprehensive, ready-reference listing of all ICBM, IRBM, and MRBM deployment locations, types of site configurations, photographic references, estimated construction and operational status, and other evaluations by the DWG. These data constitute the majority view of the DWG membership, and may not correspond precisely to individual assessments by each member. Additional data may be added to future revisions.

Dissemination of the report was previously limited to holders of the DWG report, Soviet Surface-to-Surface Missile Deployment. Because the information contained herein is both supplemental and self-sustaining, distribution will no longer be limited to holders of the above report.

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INTRODUCTION

This report is the 16th Revision of Evaluations of Soviet Surface-to-Surface Missile Deployment prepared by the Deployment Working Group (DWG) of the Guided Missile and Astronautics Intelligence Committee (GMAIC). While information contained in this and previous revisions is self-sustaining, it serves to supplement the basic DWG report Soviet Surface-to-Surface Missile Deployment, which provides detailed information on individual launch facilities of the Soviet Strategic Rocket Forces. The basic report, dated [REDACTED] Control Number [REDACTED] has been revised and updated on a periodic basis. Further updating is accomplished in reports prepared and published for GMAIC by the National Photographic Interpretation Center.

[REDACTED]

previous missions and other sources have provided additional information on the Soviet strategic ballistic missile deployment program. The new data are reflected in Table 1 and in the estimated operational status shown in Tables 2, 3, and 4. Cutoff date for information contained in this report is [REDACTED]

SOVIET ICBM DEPLOYMENT

Soviet ICBM deployment activity since the 15th Revision is highlighted by the apparent completion of 6 Type IIIA sites and the abandonment of another, and the identification of 2 confirmed and 3 probable single-silo sites at 2 complexes. At the Tyuratam Missile Test Center, significant developments include the completion of 3 launch sites and continued construction activity at what now is assessed as a probable launch facility at Complex J.

CURRENT DEPLOYMENT

The number of identified ICBM complexes remains at 24, with the search for new single-silo complexes on available photography nearing completion. See Figure 1 for locations of deployed ICBM complexes.

The 24 complexes now contain a total of 271 confirmed and probable launchers, of which 150 are soft and 121 are hard. Included in the hard launchers are 40 single-silo configurations. Additionally, we are carrying 1 more single silo in the possible category.

Of the 271 confirmed and probable launchers, 215 are considered to be operational, including 69 in a hard configuration. In addition, we believe that 26 of the 35 confirmed launchers at the Tyuratam Missile Test Center, including 9 hard, are operational.

The ICBM sites have been designated by type as shown and explained in Figure 2. We continue to be unable to determine with confidence the missile system or systems associated with single-silo configurations identified at Tyuratam and at deployed complexes. Neither can we ascertain the final configuration(s) for these sites, nor for the new probable rail-served soft sites at Plesetsk. Therefore, we have not added diagrams of these sites to Figure 2 and will continue to refer to them as Type III (single) and Type IB, respectively.

Evaluation of all evidence received since our last revision has resulted in changes at the following complexes:

ADDITIONS:

IMENI GASTELLO, Launch Site F(6), Type III (single), under construction
OLOVYANNAYA, Launch Site D7(6), Type III (single), under construction: Probable Launch Sites D8, D9, and D10, Type III (single), under construction.

DELETIONS:

GLADKAYA, Launch Site E(6), Type IIIA, abandoned.

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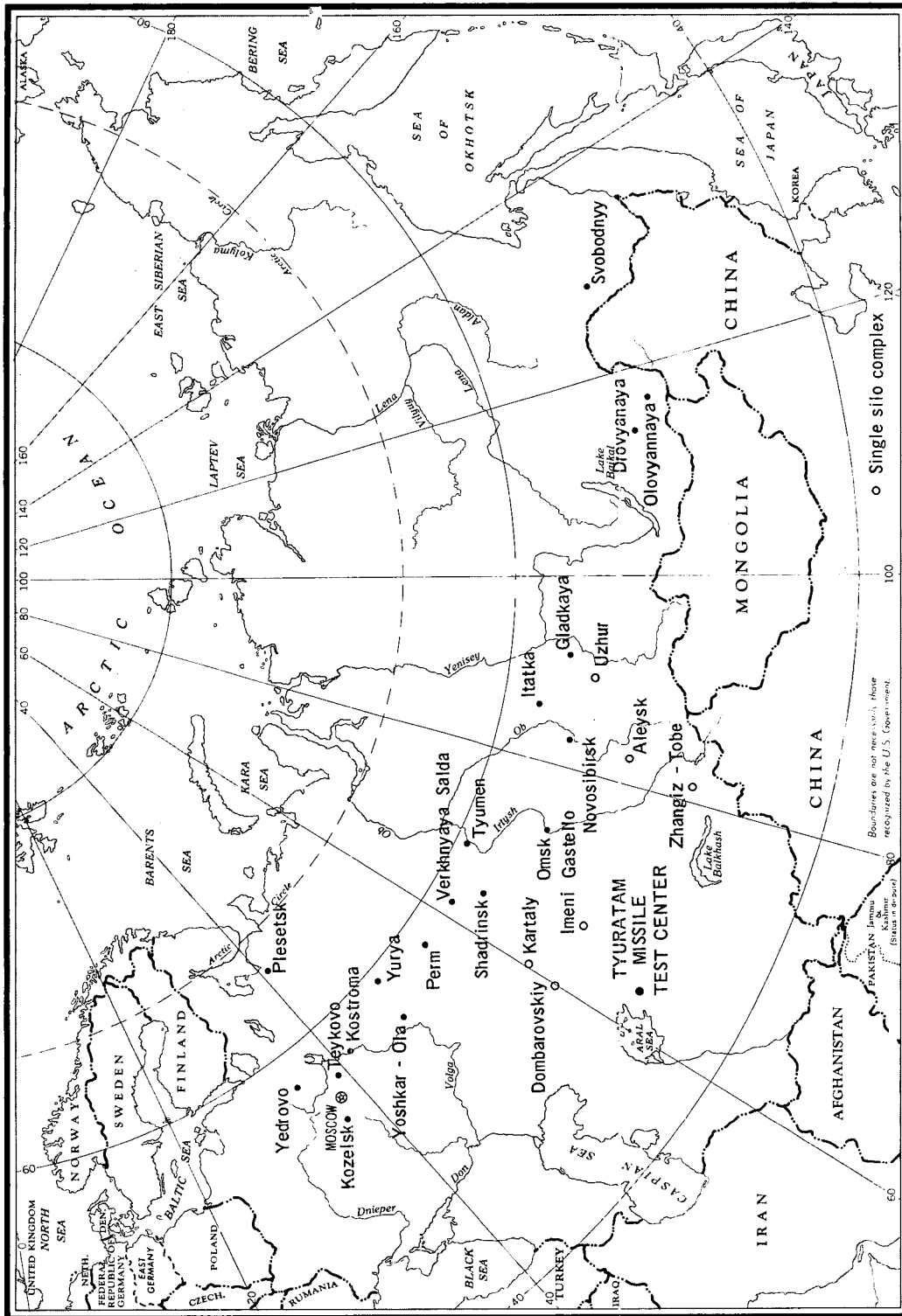


FIGURE 1. DEPLOYMENT OF SOVIET ICBM COMPLEXES.

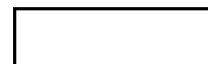
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SINGLE-SILO COMPLEXES

General

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The 6 single-silo complexes begun since fall (excluding Launch Group D at the Olov-yannaya Complex) now contain a total of 30 confirmed and probable silos in early and midstages of construction. Total silos within the individual complexes range from a low of 2 (plus 1 possible) at Kartaly to a high of 6 at Aleysk, Imeni Gastello, and Uzhur.

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Since the 15th Revision, 4 of the 6 single-silo complexes (Aleysk, Dombrovskiy, Imeni Gastello, and Uzhur) have been covered by usable photography. From this and continuing analysis of previous coverage of all 6 complexes, a general picture of the Soviet construction program at these complexes can be depicted. Construction is begun at 1 or more launch sites at approximately the same time that construction of the complex support facility is initiated. No complex main road is evident, although this feature may be added as construction progresses. Instead, maximum advantage is taken of existing roads and, where these are lacking, it appears that equipment and vehicles are moved cross-country without benefit of any road preparation. These procedures differ markedly from those observed at the 18 older ICBM complexes, where the complex support facility and a complex main road were brought to a fairly advanced stage of construction before work on the launch areas was initiated.

Construction techniques appear to be similar at those single-silo launch sites on which good coverage has been obtained. A square excavation served by 2 earth ramps appears to be the first step in silo construction, followed by a silo coring in the approximate center of the excava-

tion. Spoil from the excavation is arranged in a neat flat-topped rectangle on 1 side and a smaller flat-topped square on the opposite side. At Aleysk, the tops of these earth mounds have been surfaced with what appears to be concrete, suggesting that the earth mounding provides a hardstand at a specific level, probably to facilitate future missile handling and servicing. No evidence of construction under the earth mounds has been detected. An artist's concept of a typical single-silo launch site in a midstage of construction is shown in Figure 3.

We have noted that certain launch sites at 3 of the complexes--Aleysk A(1) and C(3), Dombrovskiy B(3), and Imeni Gastello D(4)--have security fences encompassing a much larger area than those visible at other launch sites within the same complexes. These large fenced areas are similar in pattern to the fenced area at Launch Complex I(14) at Tyuratam, which contains an L-shaped probable guidance facility (interferometer) as well as a launch silo. While no interferometer is yet visible at the deployed sites, the fenced areas are large enough to contain one. Furthermore, at Launch Site D(4) at Imeni Gastello, an excavation is visible near the silo in the same relative position as a mounded structure in the apex of the "L" at Launch Complex I(14) at Tyuratam.

An analysis of the complexes at Aleysk, Dombrovskiy, and Imeni Gastello suggests that each may contain troikas of sites, i.e., groups of 3, although at this stage other possibilities also exist. Such a grouping is reminiscent of Launch Sites A3(15) and B2(16), and Launch Complex I(14) at Tyuratam. The 3 sites at Tyuratam are connected by what appear to be cable ditches (see 15th Revision). This feature is not yet evident at any of the 6 deployed single-silo complexes.

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Aleysk Complex

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The Aleysk Complex was covered by [REDACTED]

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[REDACTED] interpretable results. The complex consists of a complex support facility, a possible rail-to-road transfer point, and 6 single-silo launch sites, all in a midstage of construction. The entire complex is served by a network of unimproved roads and trails. A schematic layout of the complex is shown in Figure 4.

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Construction of this complex was begun subsequent to [REDACTED]. Initial

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construction activity at the complex was observed on [REDACTED] when Launch Site A(1) was identified. The complex support facility, negated on [REDACTED]

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The 6 launch sites are in a midstage of construction and are typical examples of the construction techniques at single-silo complexes. All 6 have square excavations containing a silo under construction. Spoil from the excavations has been placed on either side of the silos, forming a rectangle on 1 side and a square on the other. At 5 of the 6 sites, the spoil piles appear to be level and surfaced with concrete. All 6 launch sites are inclosed by security fences. The fences at Launch Sites A(1) and C(3) inclose a considerably larger area than those at the other 4 sites, suggesting space for an interferometer, although none is evident at either site as yet. Launch Site C(3) is shown in Figure 5.

Dombarovskiy Complex

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The Dombarovskiy Complex is covered by poor-quality stereo photography on Mission [REDACTED]. The complex consists of a complex support facility, a possible rail-to-

road transfer point, and 5 single-silo launch sites, each containing a silo under construction. A schematic layout of this complex is depicted in Figure 6.

The complex can be negated on [REDACTED] although a survey line for the rail spur was present at that time. First evidence of construction activity was observed on [REDACTED] when the complex support facility and Launch Sites A(4) and B(3) were identified.

Launch Sites A(4), B(3), C(2), and D(1) are in a midstage of construction; Launch Site E(6), confirmed as a launch facility on [REDACTED] remains in an early stage.

The construction techniques at all 5 launch sites are characteristic of single-silo complexes. Four of the launch sites, (all except Launch Site E(6), are fenced; the secured area at Launch Site B(3) is larger than the others and similar in pattern to Launch Complex I(14) at Tyuratam. Launch Site B(3) is shown in Figure 7.

Imeni Gastello Complex

[REDACTED] provides the first good-quality stereo coverage of the Imeni Gastello Complex (Figure 8), the most recently identified of the 6 single-silo complexes. Highlighted on this coverage is the identification of Launch Site F(6), a single-silo facility in a midstage of construction.

Construction at the complex can first be identified on [REDACTED] at which time activity can be observed at the complex support facility, the rail-to-road transfer point, and Launch Areas C(3), D(4), and E(5). Launch Sites A(1) and B(2) were not covered on this mission, and were first observed on [REDACTED]. Launch Site F(6) is first visible on [REDACTED] in [REDACTED]. A schematic layout of this complex is shown in Figure 9.

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The complex is situated in an agricultural area of relatively flat-to-gently rolling terrain. The various components of the complex are connected by a network of previously existing farm roads. No extensive road construction or repair is evident. Some deviation from existing roads has been necessary to reach the various construction sites. This has been accomplished with a minimum of new road surfacing, and often is no more than tracking across open fields.

In general, construction techniques at the launch sites conform to the pattern previously described, although the rectangular and square areas on either side of the silos are not apparent. Security fences can be observed around 4 of the launch sites, including that at Launch Site D(4) whose sides average in excess of 1,600 feet (Figure 10). This site also contains an excavation near the silo, in the same relative position as the mounded structure at the apex of the L-shaped probable guidance facility at Launch Complex I(14) at Tyuratam. Another large fence around Launch Site C(3) predates site construction and may not be significant.

Kartaly Complex

The Kartaly Complex has not been covered by [redacted] and available information was presented in the 15th Revision. It consists of a complex support facility and 1 confirmed, 1 probable, and 1 possible single-silo launch sites, all in an early stage of construction. Construction at this complex was probably initiated after [redacted] although only the complex support facility and the confirmed Launch Site B(2) can be negated on that photography.

Uzhur Complex

[redacted] provided fair-quality coverage of the Uzhur Complex, but interpretation was hindered considerably by snow cover and low sun angle.

The complex consists of a complex support facility, a rail-to-road transfer point, and 6 single-silo launch sites, all in a midstage of construction. A schematic layout of the complex is shown in Figure 11.

Construction activity at this complex can first be identified on [redacted] At that time the complex support facility and Launch Sites B(2), D(4), and F(6) were visible. Because of cloud cover, negation of the entire complex cannot be affirmed before [redacted] However, based on construction timing, we believe that work at this complex began in [redacted]

While construction techniques at this complex generally parallel those at the other 5 single-silo complexes, certain differences are also apparent. Extensive effort has been made to improve existing roads leading to several of the construction areas. Additionally, because of the nature of the terrain, the square and rectangular areas on each side of the silos at some of the sites have been prepared by cutting into the sides of hills. The signature of these sites, however, is comparable to those at the other 5 complexes. Launch Site B(2) is shown in Figure 12.

Zhangiz-Tobe Complex

The Zhangiz-Tobe Complex is covered on [redacted] but the small scale and obliquity of the photography prevent interpretative results that would add to our knowledge of construction activity and site

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signatures. A diagram of this complex, based on previous coverage, is shown in Figure 13.

This complex, the first single-silo complex to be identified, was first observed on [] when the complex support facility and Launch Site A(1) were visible. While lack of coverage precludes negation prior to [] we believe, based on construction timing, that work at this complex was initiated late in [] It currently consists of a complex support facility and 5 launch sites, all in a midstage of construction.

The signature of the launch sites, characterized by a U-shaped area formed by a generally square excavation serviced by 2 inclined earth ramps, is similar to those at the other 5 complexes. Launch Site A(1) is shown in Figure 14.

OLOVYANNAYA COMPLEX

[] provided fair-quality stereo coverage of the Olovyannaya Complex. No significant changes are visible at Launch Site A(1), a completed Type IIIA, or at Launch Sites B(2) and C(3), both Type IIIA configurations in a late stage of construction.

At Launch Group D, another single-silo launch site, designated D7(6), is confirmed approximately 3,200 feet northwest of the probable support/control facility (Figure 15). In addition, 3 probable new silos, designated D8, D9, and D10 (Figure 16), are under construction on the eastern side of the launch group. (One DWG member carries these 3 sites in the possible category.) An extensive network of cable ditches is being constructed rapidly between the sites, in much the same manner as for the US Minuteman System (Figure 17).

The lack of good-quality, high-resolution photographic coverage of Launch Group D pre-

cludes a definitive assessment at this time, but several general observations can be made. It is apparent that the overall configuration of the launch group and the method in which it is being constructed differ considerably from the configuration and construction techniques observed at the other 6 single-silo complexes. The silo excavations at Olovyannaya appear circular rather than U-shaped, cover a smaller area, and appear shallower. The silo structures also appear to be round, while those at the other complexes are square. Accurate mensural data cannot be obtained from available photography, but it appears that the silo corings and silo apertures at the Olovyannaya launch group are somewhat smaller in diameter than those at the newer complexes. In summary, it appears possible that Launch Group D at Olovyannaya will accommodate a different missile system than will be employed at the other 6 complexes.

Lack of high-resolution coverage at Olovyannaya also prevents a firm association of these silos with a prototype site or sites at Tyuratam, if indeed such a prototype exists at the rangehead. Certain similarities in silo configuration and facilities are suggested when comparing some of the Olovyannaya single-silo sites with Launch Site G8/G9 at Tyuratam, although the latter is dual-silo configuration (Figures 18, 37, and 38). The Olovyannaya and Tyuratam sites both appear to have the circular rather than a square silo structure. Two mounded structures at Launch Site D2(2) at Olovyannaya are located in the same relative position as one of the probable equipment bunkers and the control bunker at G8/G9. This association is tenuous, however, and not conclusive.

TYPE IIIA SITES

Site Abandonment

[] confirmed our suspicion that Launch Site E(6) at Gladkaya

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[redacted] has been abandoned (Figure 19). This site, first observed in an early stage of construction [redacted] had not been covered by usable photography since [redacted]. It is the second abandoned Type IIIA site of the group of 12 begun during the spring and summer [redacted] after a 9-month break in construction starts. One Type IIIA site of the original group of 15 begun prior to [redacted] was also abandoned in an early stage of construction, as reported in our 15th Revision. Of the remaining 10 sites in the group of 12, we suspect that construction has also ceased at Launch Site H(8) at Kostroma. However, we are awaiting further confirmation before dropping this site from the inventory.

Site Completions

[redacted] photography since our last revision indicates that 6 of the 9 remaining Type IIIA sites (excluding Launch Site H(8) at Kostroma) in the group begun [redacted] have been completed, and that construction is nearing completion at the other 3.

[redacted] revealed that Launch Sites G(7) at Svobodnyy and K(10) at Yurya are complete (Figure 20). Launch Sites E(5) and F(6) at Drovyanaya (Figure 21) appear complete on [redacted].

We also estimate that Launch Sites C(3) at Shadrinsk and F(4) at Perm are operational, based on construction timing. Both were in a very late stage of construction when last ob-

Associated Missile System

We still have been unable to distinguish any significant difference between the first and second groups of Type IIIA sites deployed in the field. Eight of the 10 remaining in the second

[redacted] This feature, however, can well be related to improved handling procedures rather than a new or modified missile system.

We had surmised that this later group of 10 sites was related to Launch Site D2(9) rather than D1(4) at Tyuratam (associated with the SS-7 system) and that an L-shaped guidance facility would appear as the launch facilities neared completion. There is no evidence that any such facilities are under construction. This indicates, of course, that the associated missile system utilizes all-inertial guidance. The SS-7 ICBM utilizes an all-inertial guidance scheme and no guidance facilities have been observed at SS-7 sites. While flight tests of the newer SS-9 ICBM indicate that it utilizes a radio-guidance link, we believe that it, like the SS-7, can be flown in all-inertial mode without the necessity of a ground-based guidance link. In summary we are unable to determine whether the later group of 10 Type IIIA sites are for the SS-7, the SS-9, or, less likely, for both.

SOFT SITES

In our 13th Revision we included artist's concepts of Type IIB, IIC, and IID soft sites, as well as Type IIIA and IIIB hard sites. Similar illustrations of Type IA and IIA soft sites were not included because of lack of high resolution photography. Such photography has since been obtained and concepts of these categories are shown in Figures 22 and 23.

PLESETSK COMPLEX

There has been no usable photographic coverage of the Plesetsk ICBM Complex since our last revision, and therefore we cannot report on construction progress at the 2 new probable rail-served soft sites, designated in our 15th

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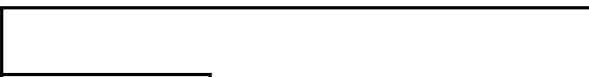
Revision as Probable Launch Sites G(9) and H(10). Lack of new information also precludes further assessment of Launch Site F, the completed 2-pad configuration which resembles Launch Site 5C1 at Kapustin Yar rather than any known ICBM configuration.

TYURATAM MISSILE TEST CENTER

Test Range Facilities

The Tyuratam Missile Test Center was only

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The quality of the photography ranges from poor-to-good and reveals that construction has continued at all uncompleted complexes. Recent significant developments at the test center include completion of Launch Sites D2(9), G3/G4(11) and G5/G6(12); the assessment that a probable launch facility is under construction at Complex J; and evidence of additional construction activity at Launch Sites E(6) and F(5).

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At Launch Complex A no change was observed at Pad A1(1). However, on

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2 linear objects are visible on the rails adjacent to the launch pad (Figure 24). One, on a side rail, is a probable crane. The other, on the center rail to the pad, is a possible missile or missile component approximately 125 feet long. No change was visible at Pad A2.

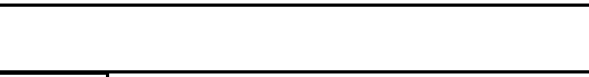
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indicates that the single-silo Launch Site A3(15) is still in a midstage of construction, with the silo not yet up to ground level (Figure 25).

No significant changes at Launch Complex B could be discerned on poor-quality photography.

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Facilities at Launch Complex C(3) showed



photography a probable missile is

X1

erected on Pad C1 (Figure 26).

Launch Complex D is covered by fair-quality, small-scale photography on

25X1

Except for construction of a new settling basin outside the secured area, no change is visible at Launch Site D1(4). Launch Site D2(9) appears to be complete except for unidentified construction activity in the southern part of the secured area (Figure 27). Five unidentified objects have been added within the electronic facility west of the interferometer. Their position and orientation suggest an operational rather than an administrative function.

25X1

revealed no changes within the secured area at Launch Complex E(6). However, a new dead-end rail spur has been constructed from the rail line west of the complex to a point near the access road south of the secured area (Figure 28).

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revealed that a ramp-like excavation has been dug at Launch Complex F(5), from the west end of the loop road down toward a probable underground structure located just forward of the loop road and centered on the silos (Figures 29 and 30). The excavation is backfilled on

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Launch Complex G was covered on



be observed at Launch Site G1/G2(7), which is firmly associated with the SS-10 flight test program (Figures 31 and 32). At Launch Site G3/G4(11), both launch pads and the electronic facility appear complete on (Figures 33 and 34). Launch Site G5/G6(12), a road-served soft facility, appears complete on (Figure 35). The single gantry associated with this site is approximately 90 feet high. Launch Site G7(18) remains

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in a midstage of construction (Figure 36), as viewed on [redacted]. The square silo structure has been built up from the bottom of the excavation, but is not yet up to ground level. The access road has been partially looped in the vicinity of the silo. Construction continues on the L-shaped electronic facility, but it has not yet been backfilled. The dual-silo configuration at Launch Site G8/G9(19) remains in a late stage of construction. A hardstand has been constructed immediately south of each silo. See Figures 37 and 38 for photography and line drawings of this launch site in mid and late stages of construction.

A review of available photography of Launch Complex G indicates that what appears to be a cable ditch runs from Launch Site G5/G6(12) to Launch Site G8/G9(19); with connections to Launch Site G3/G4(11), the possible guidance facility in the vicinity of Launch Site G1/G2(7), and the probable technical support area in the complex support facility (Figure 39). A second probable cable ditch under construction appears to be intended to connect Launch Site G7(18) with Launch Complex K(13). At each facility the ditch currently ends somewhat short of the associated electronic facility (Figure 40).

No change in facilities is apparent on coverage of Launch Complex H(8) since our last revision. Photography and a line drawing of this site are shown in Figures 41 and 42.

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[redacted] shows no significant change at Launch Complex I(14) since our last revision. Figure 43 presents an artist's concept of this single-silo launch facility, which is currently in a midstage of construction.

At Complex J (Figure 44) the excavation located 3,000 feet northeast of the end of the road leading to the support facility has been enlarged considerably, and is now approximately the size of the blast pit at Pad A1(1). A ramp-like cut ex-

tends into the deepest part of the excavation. Spoil is being piled approximately 1,800 feet northeast of the excavation. A well-graded road from the main complex road to the rear of the support area for Launch Complex A is under construction. The location and nature of the excavation indicate that it will probably be developed into a launch facility.

Construction is continuing at Launch Complex K(13). [redacted] (Figure 45) shows that a rectangular hardstand/service apron has been constructed on the north side of K1. Similar construction appears to be in progress at K2. Four unidentified objects are located adjacent to the 150- by 50-foot building. Ditching connects this building and the 2 silos. The silos appear to be nearly at ground level and backfilling may have commenced. An artist's concept of this launch facility is depicted in Figure 46.

Test Range Activity

[redacted] only 5 ICBM flight test operations were noted at the Tyuratam Missile Test Range. An extended-range firing of a probable SS-10 took place from Launch Complex G on [redacted]. There were 2 successful SS-9 firings to the Kamchatka Impact Area, on [redacted] both from Launch Complex C(3). An operation on [redacted] possibly represented an SS-9 failure. An SS-7 was launched to Kamchatka on [redacted] the first such operation in 3 months.

In addition, an unidentified vehicle was launched on [redacted] but failed after 5 minutes of flight. It appears that this vehicle may be new, but whether intended for an ICBM or space role (or both) cannot be determined.

SS-9 firings now total 17, of which 4 were failures. The failures occurred on [redacted]

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[] Latest firings of this missile system are believed to be a continuation of the systems refinement and accuracy improvement tests initiated on [] after completion of tests to the Pacific.

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The [] event brought the total SS-7 firings to 87, of which 14 have

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failed. This flight appeared to be a limited R&D flight or a troop-training firing. SS-10 firings now total 8, of which 1 failed; the SS-8 flight total is 58, including 24 failures; and the SS-6 scoreboard shows 5 failures in a total of 46 firings.

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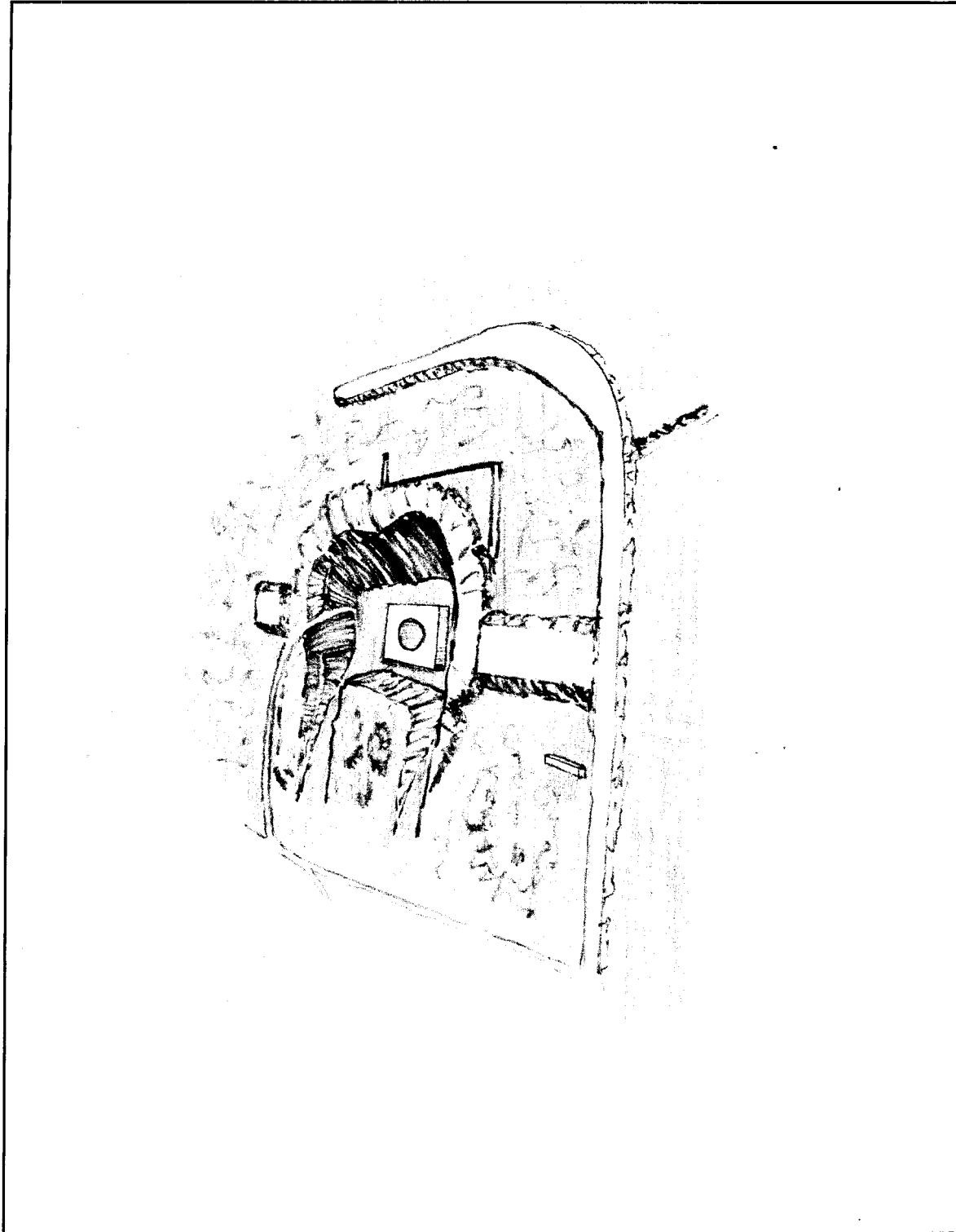
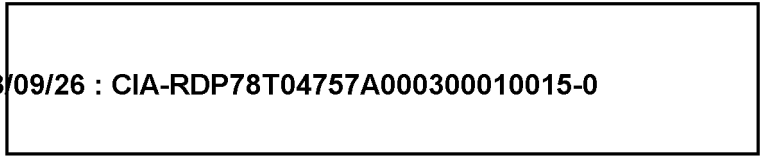


FIGURE 3. ARTIST'S CONCEPT OF TYPICAL SINGLE-SILO LAUNCH SITE IN MIDSTAGE OF CONSTRUCTION.

NPIC J-8015 (1/68)

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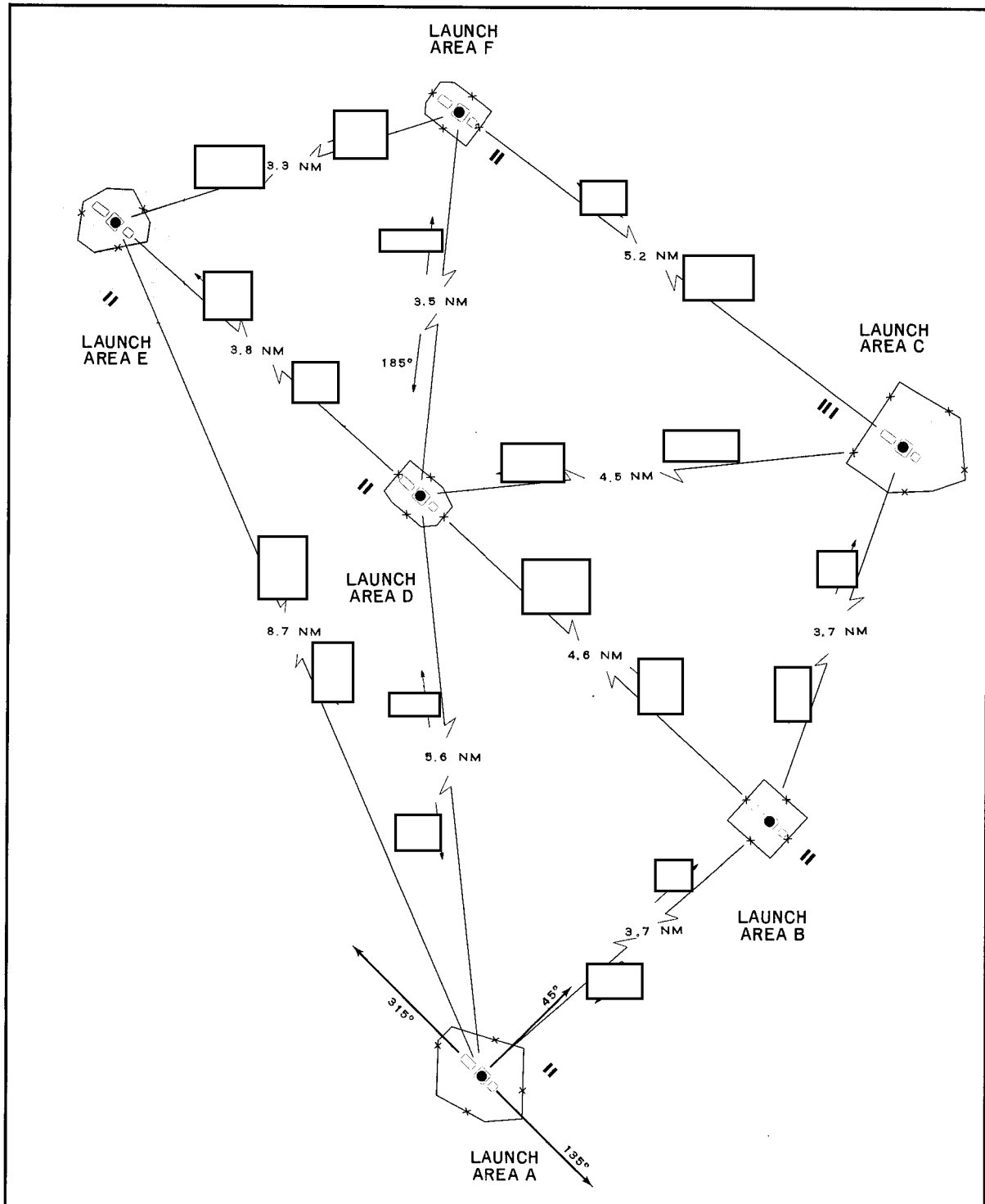


FIGURE 4. SCHEMATIC LAYOUT OF LAUNCH AREAS, ALEYSK ICBM COMPLEX.

NPIC J-7808 (1/65)

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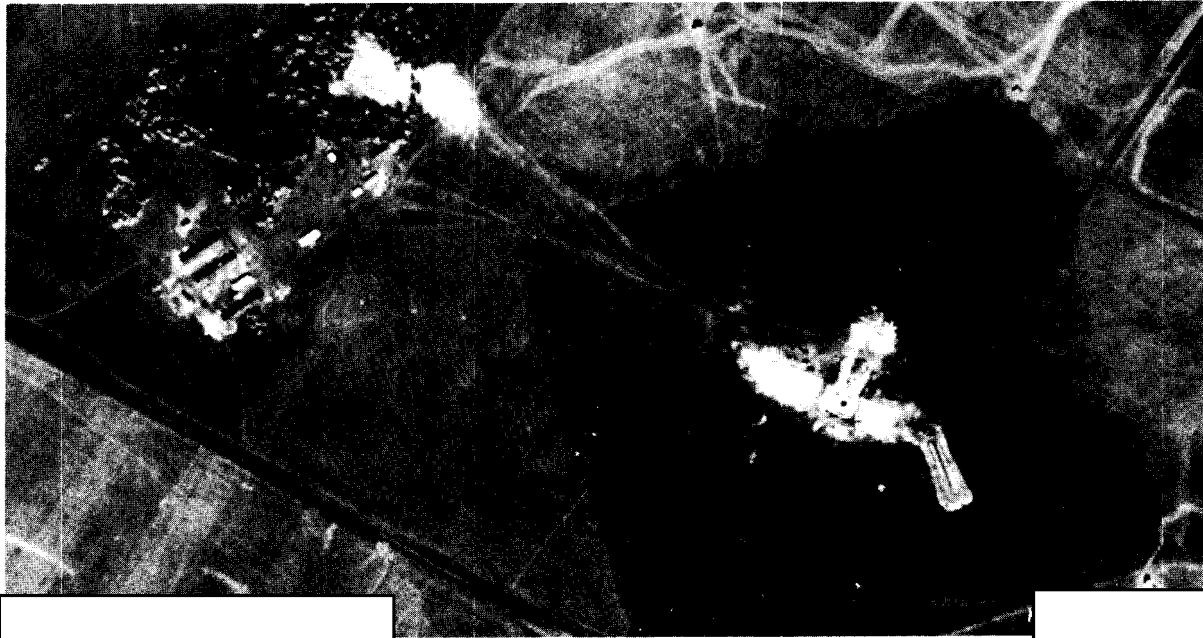
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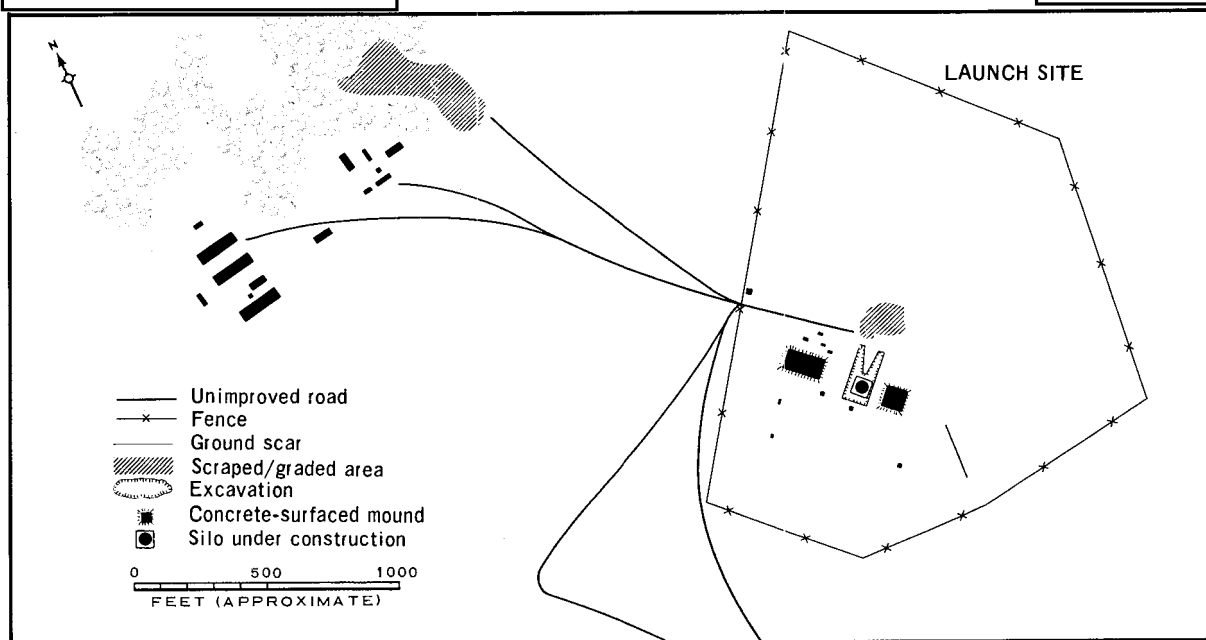
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LAUNCH SITE		ASSOCIATED BUILDINGS	
Concrete-surfaced mound	155 x 65	3 Buildings	175 x 45
Excavation	105 x 85	1 Building	80 x 30
Concrete-surfaced mound	75 x 75	2 Buildings	75 x 25
Silo	65 x 60	1 Building	60 x 25
Silo aperture	25Diam	1 Building	55 x 25
		1 Building	35 x 20

NPIC J-7813 (1/65)

FIGURE 5. LAUNCH SITE C(3), ALEYSK ICBM COMPLEX.

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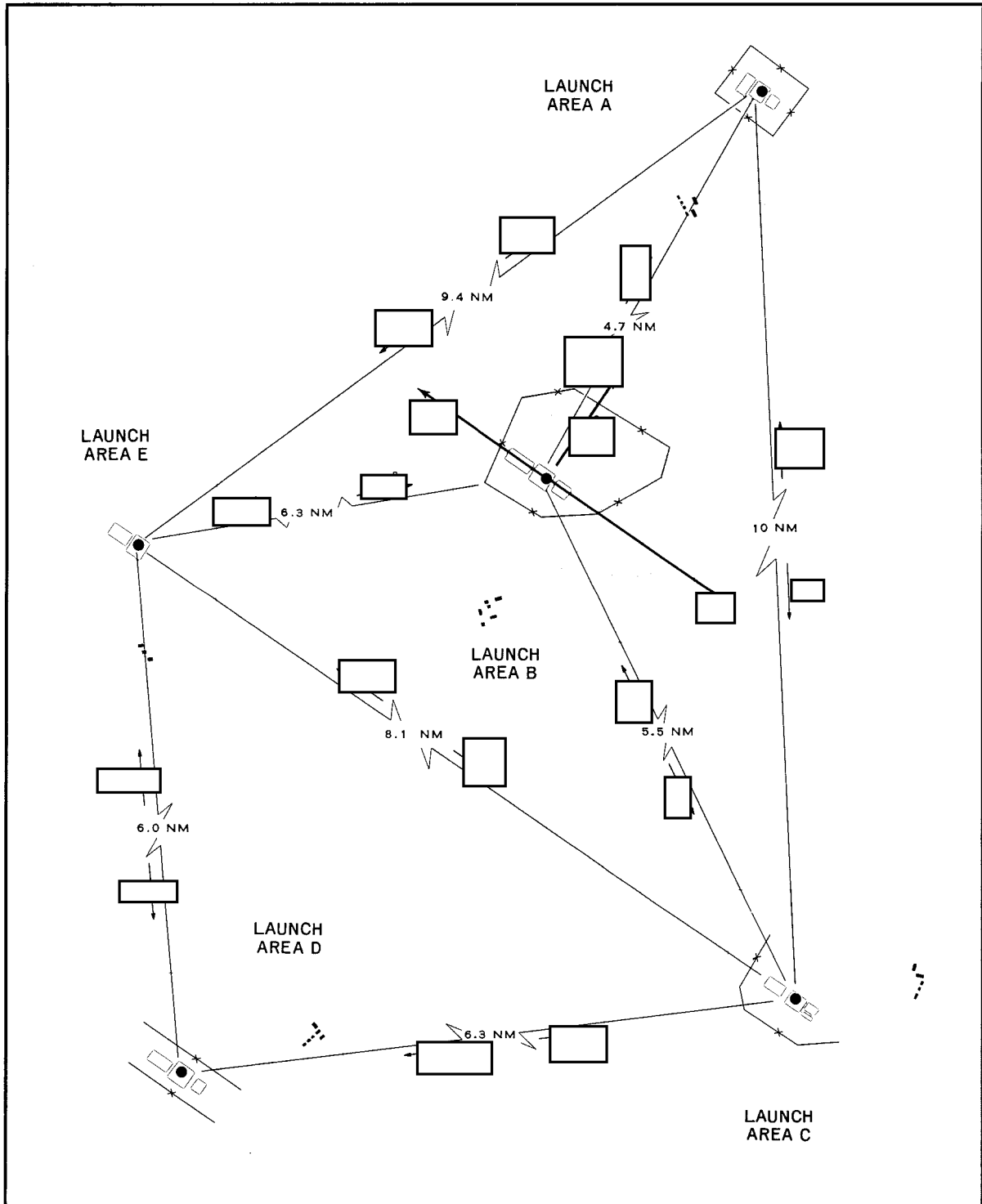


FIGURE 6. SCHEMATIC LAYOUT OF LAUNCH AREAS, DOMBAROVSKIY ICBM COMPLEX.

NPIC J-8016 (2/68)

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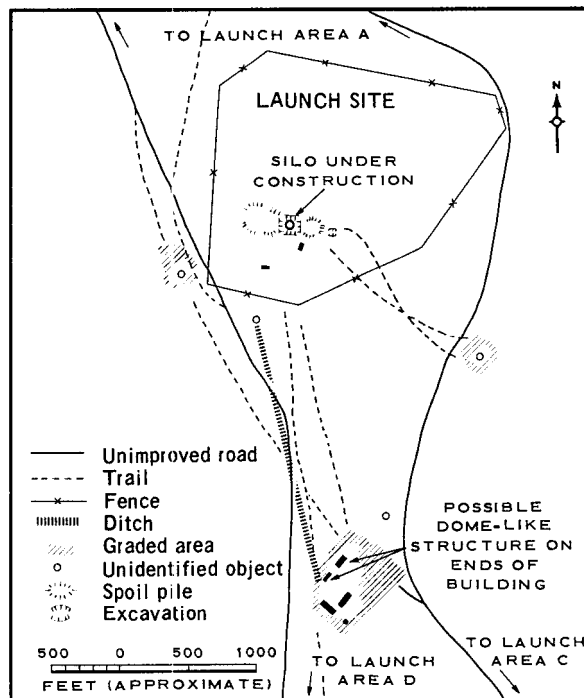
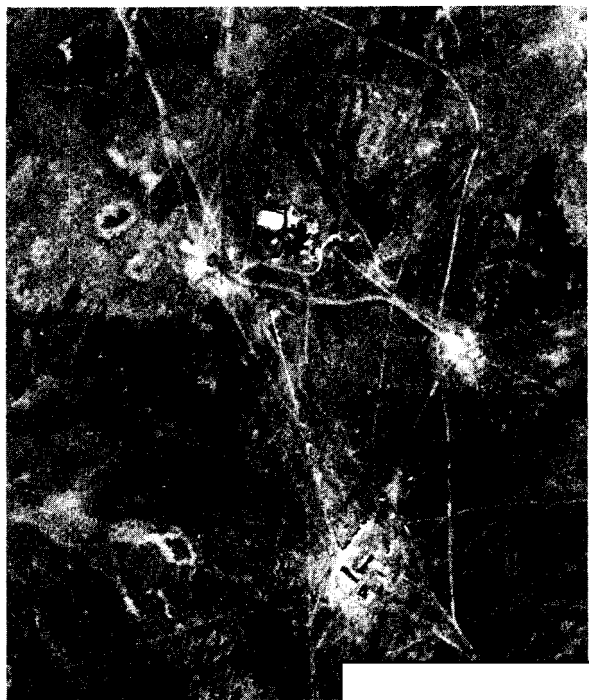
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LAUNCH SITE

1 Spoil pile	200 x 105	1 Building	70 x 15	1 Building	180 x 45	2 Buildings	90 x 25
1 Spoil pile	110 x 95	1 Building	75 x 15	1 Building	160 x 30	1 Building	45 x 45

NPIC J-6215 (1/65)

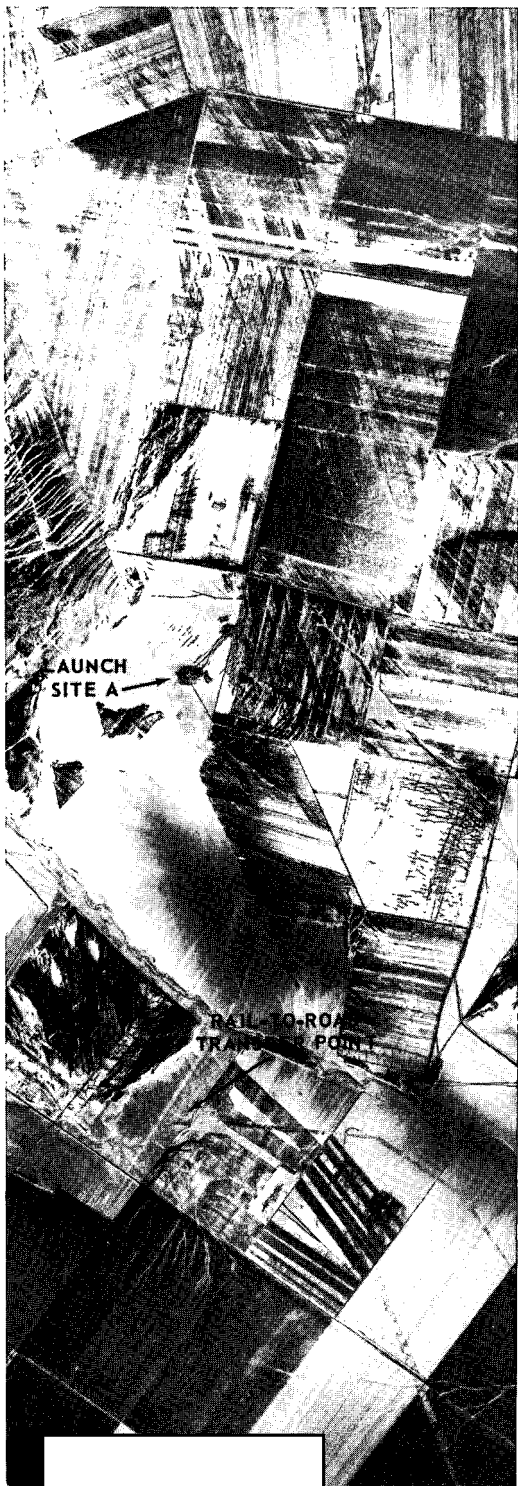
FIGURE 7. LAUNCH SITE B(3), DOMBAROVSKIY ICBM COMPLEX.

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FIGURE 8. LAUNCH SITES A(1) - F(6) AND RAIL-TO-ROAD TRANSFER POINT, IMENI GASTELLO ICBM COMPLEX.

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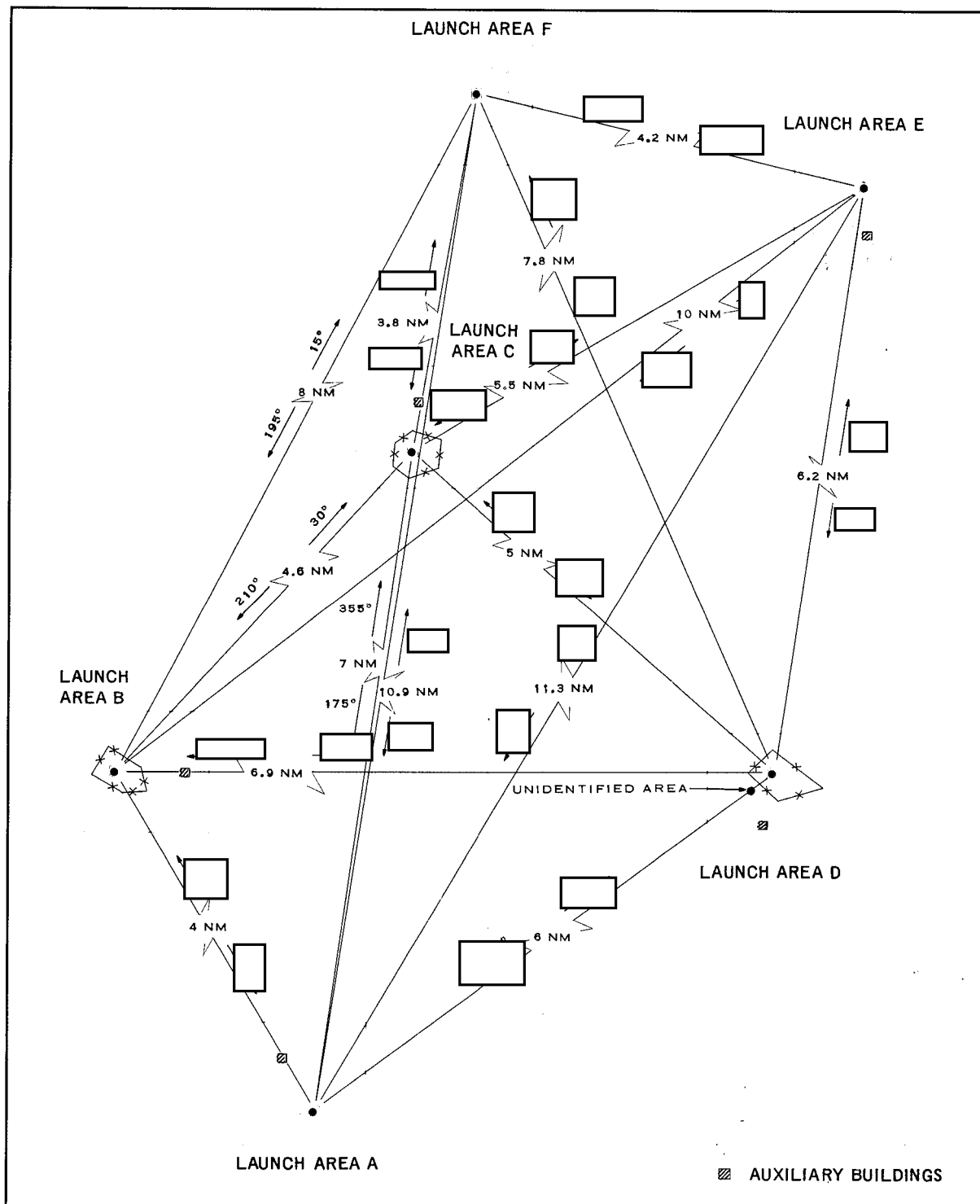
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FIGURE 9. SCHEMATIC LAYOUT OF LAUNCH AREAS, IMENI GASTELLO ICBM COMPLEX.

NPIC J-8018 (1/65)

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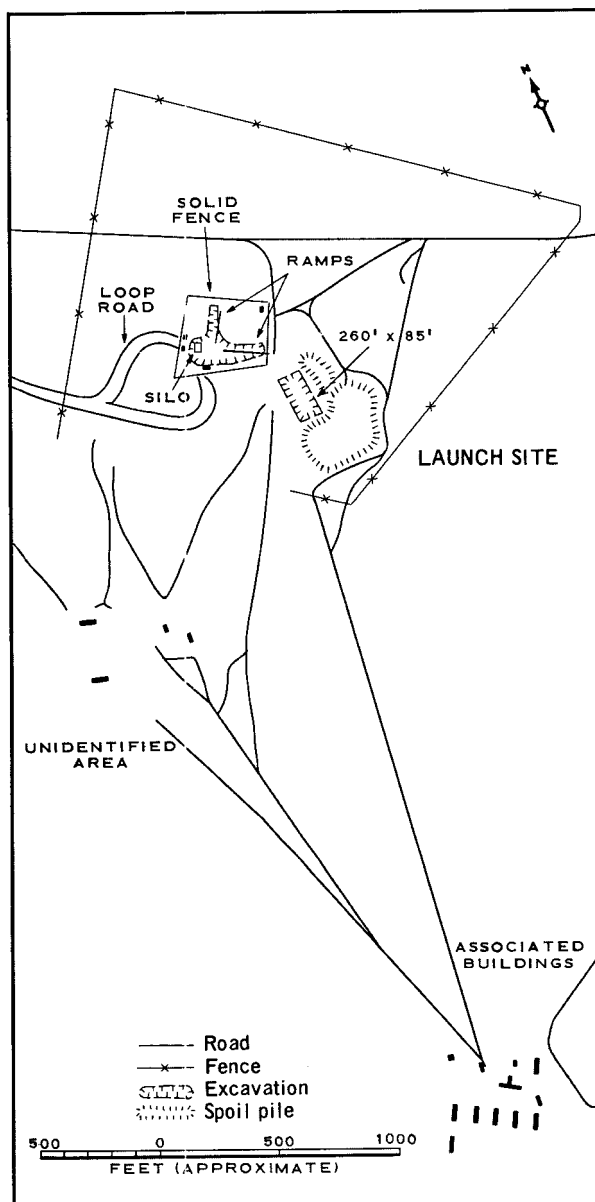
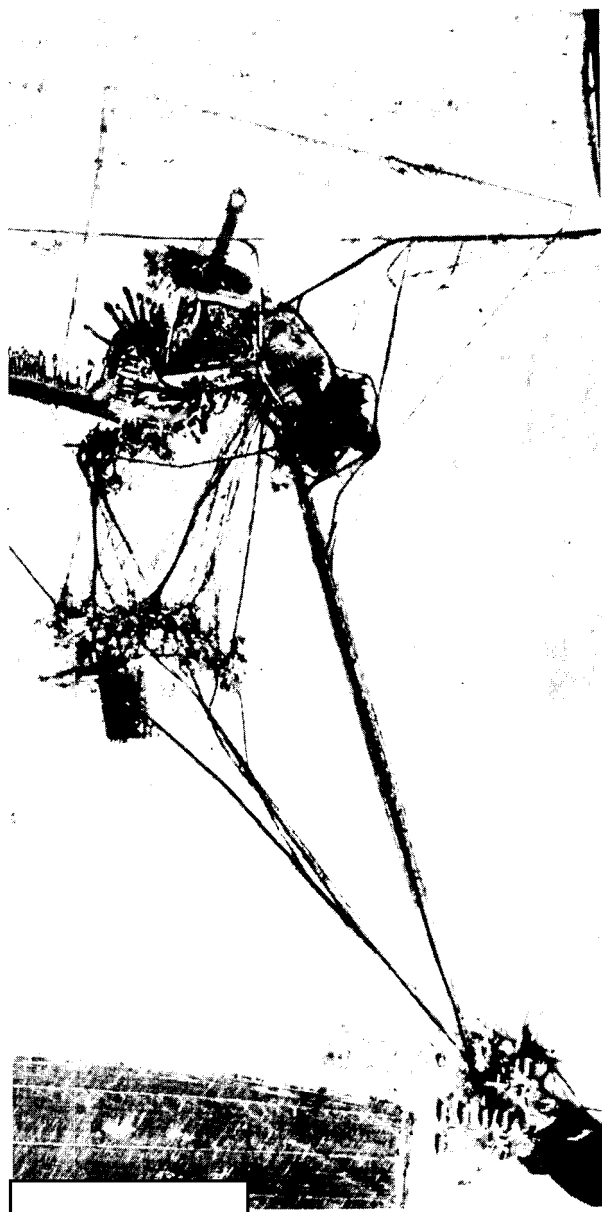
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LAUNCH AREA

- 1 Building -
- 1 Building -
- 1 Building -
- 1 Building -
- Silo footing -

UNIDENTIFIED AREA

- 2 Buildings -
- 1 Building -
- 1 Building -

ASSOCIATED BUILDINGS

- 1 T-shaped Building -
- 7 Buildings -

25X1

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NPIC J-8019 (1/65)

FIGURE 10. LAUNCH SITE D(4), IMENI GASTELLO ICBM COMPLEX.

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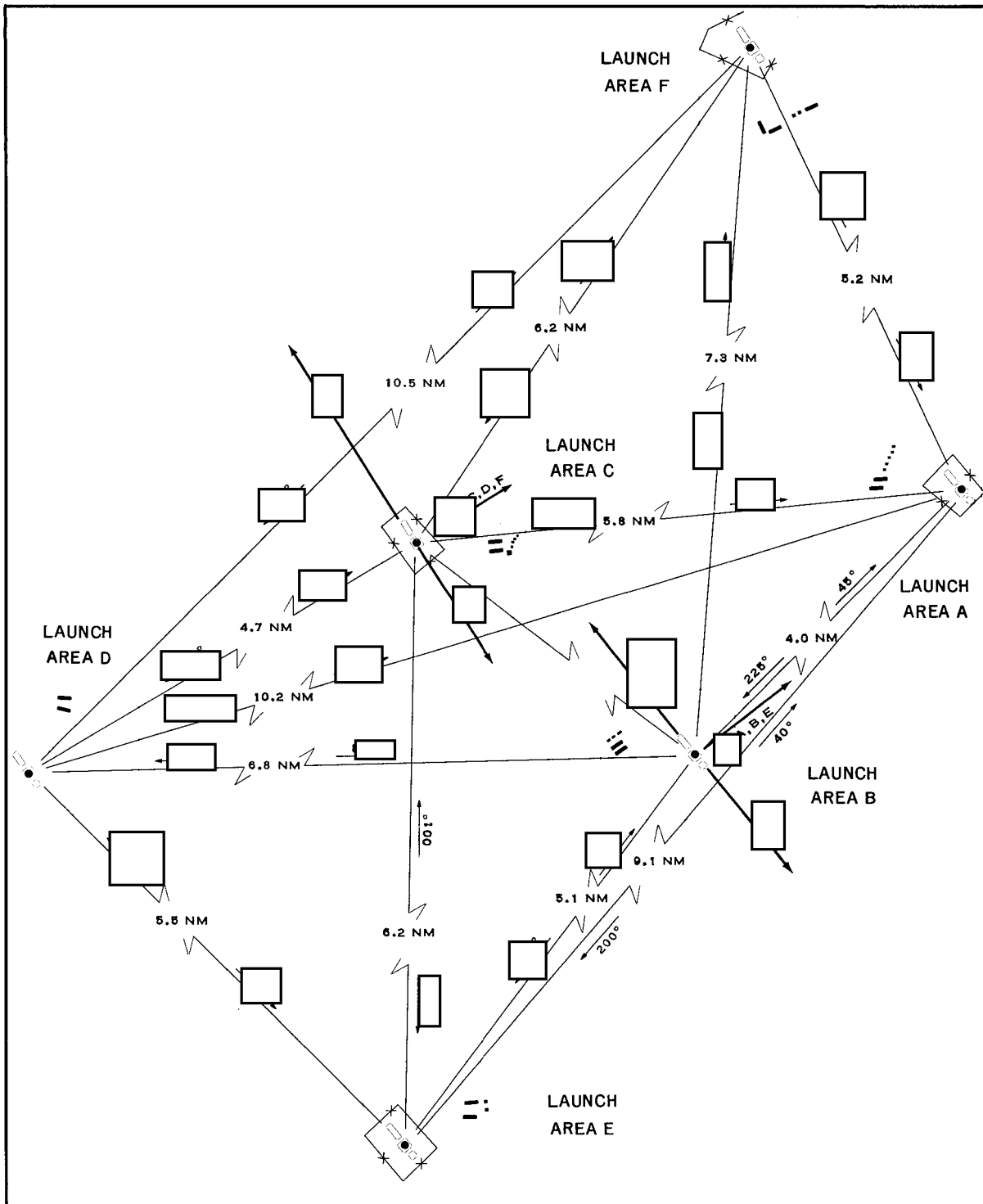
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FIGURE 11. SCHEMATIC LAYOUT OF LAUNCH AREAS, UZHUR ICBM COMPLEX.

NPIC J-8020 (1/65)

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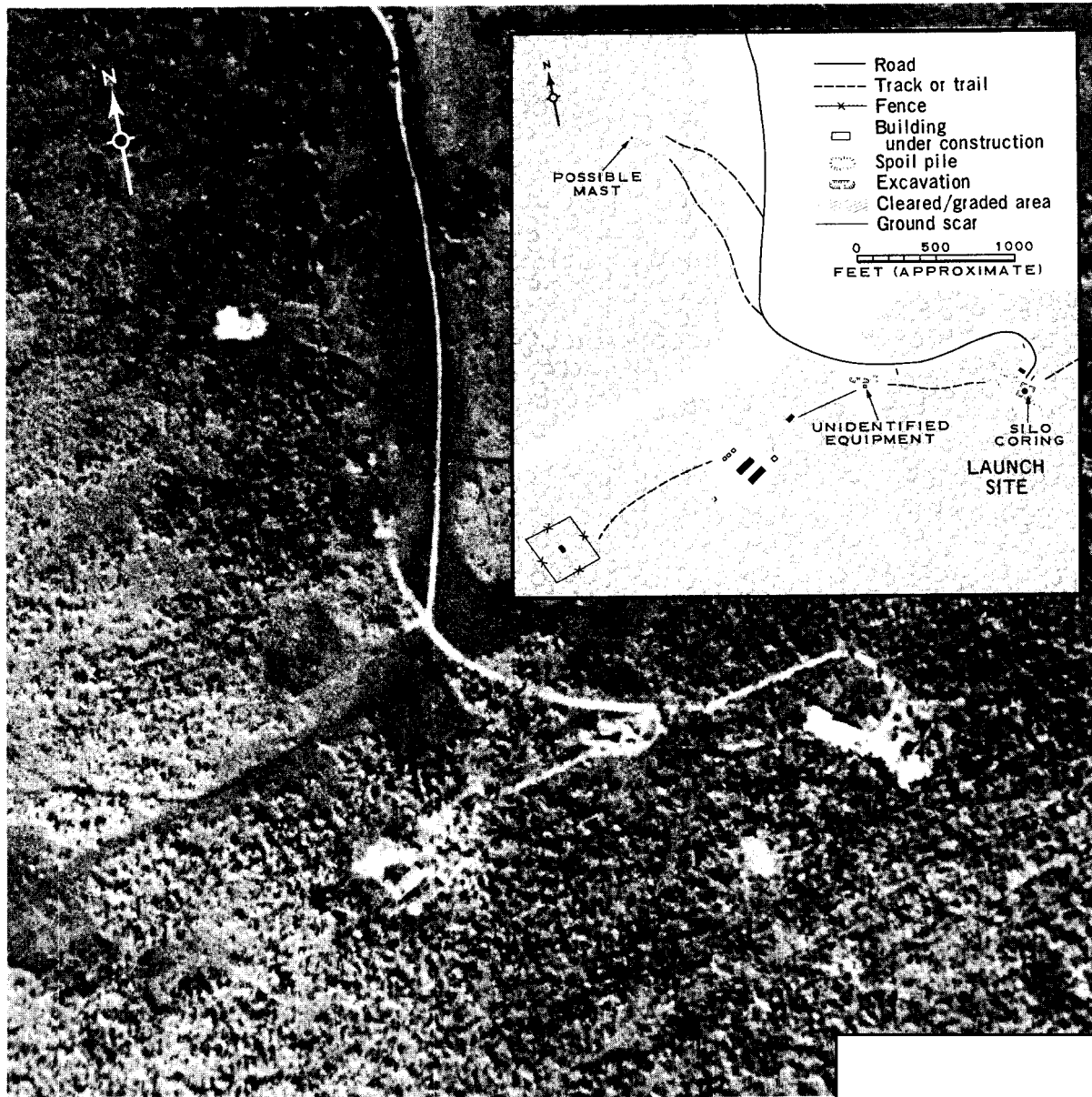
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LAUNCH SITE

Excavation	110 x 105
Silo coring	
Prepared spoil pile	250 x 110
Graded area	65 x 50
3 buildings	50 x 15 (approx)

AUXILIARY BUILDINGS

1 building	140 x 45
1 building	135 x 35
1 building	120 x 35
1 building (U/C)	70 x 20
3 structures	30 x 25
1 building	35 x 20
1 building	75 x 25

ALL DIMENSIONS ARE IN FEET.

NPIC J-8021 (1/65)

FIGURE 12. LAUNCH SITE B(2), UZHUR ICBM COMPLEX.

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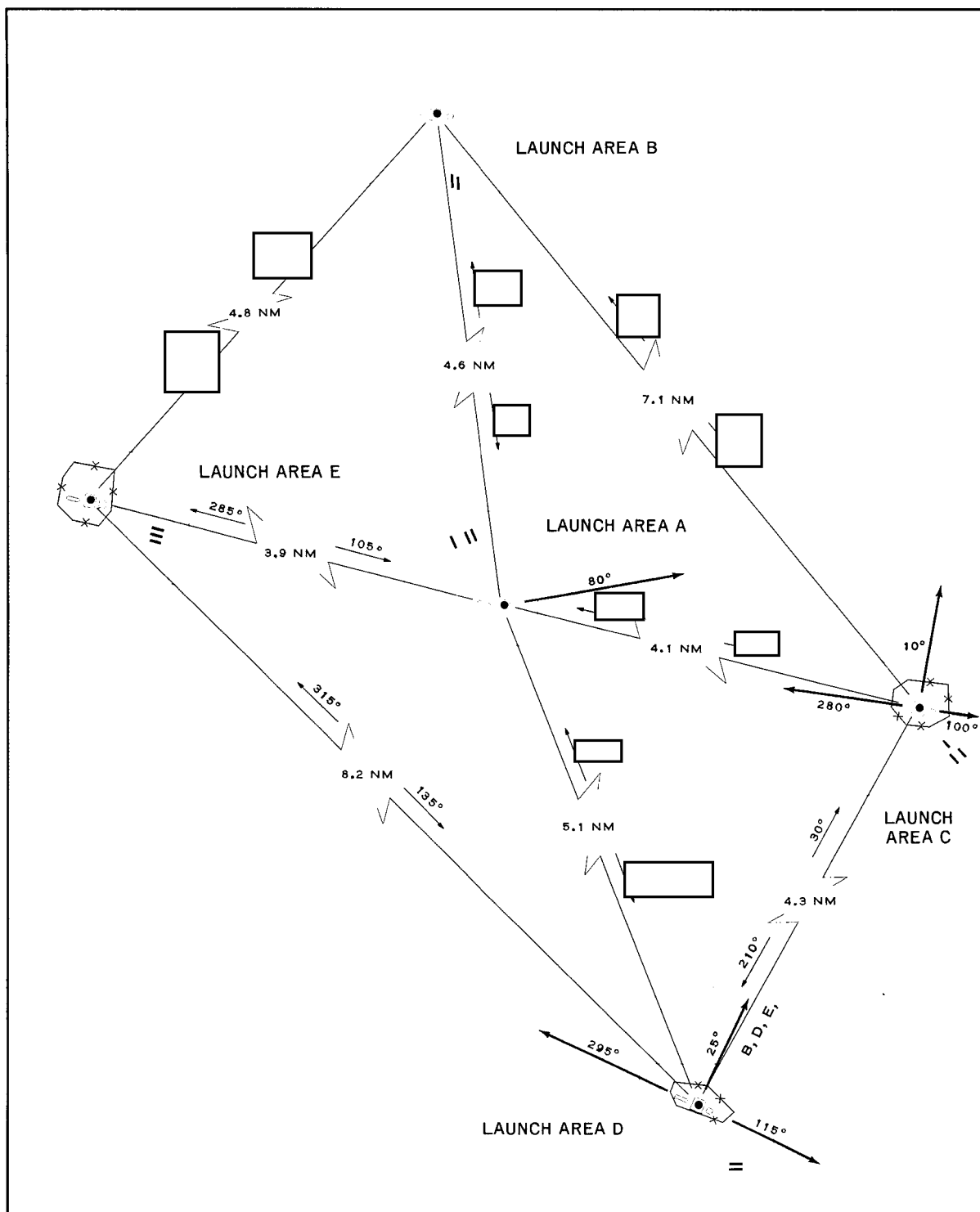


FIGURE 13. SCHEMATIC LAYOUT OF LAUNCH AREAS, ZHANGIZ-TOBE ICBM COMPLEX.

NPIC J-8022 (1/65)

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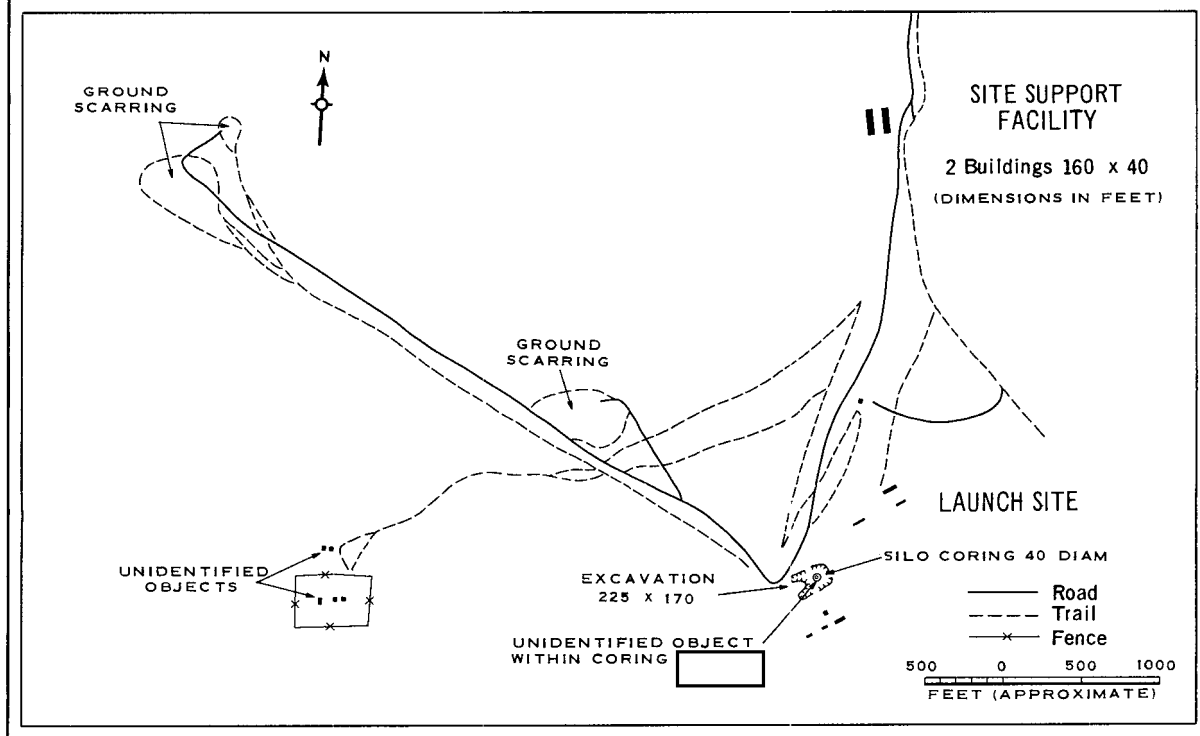
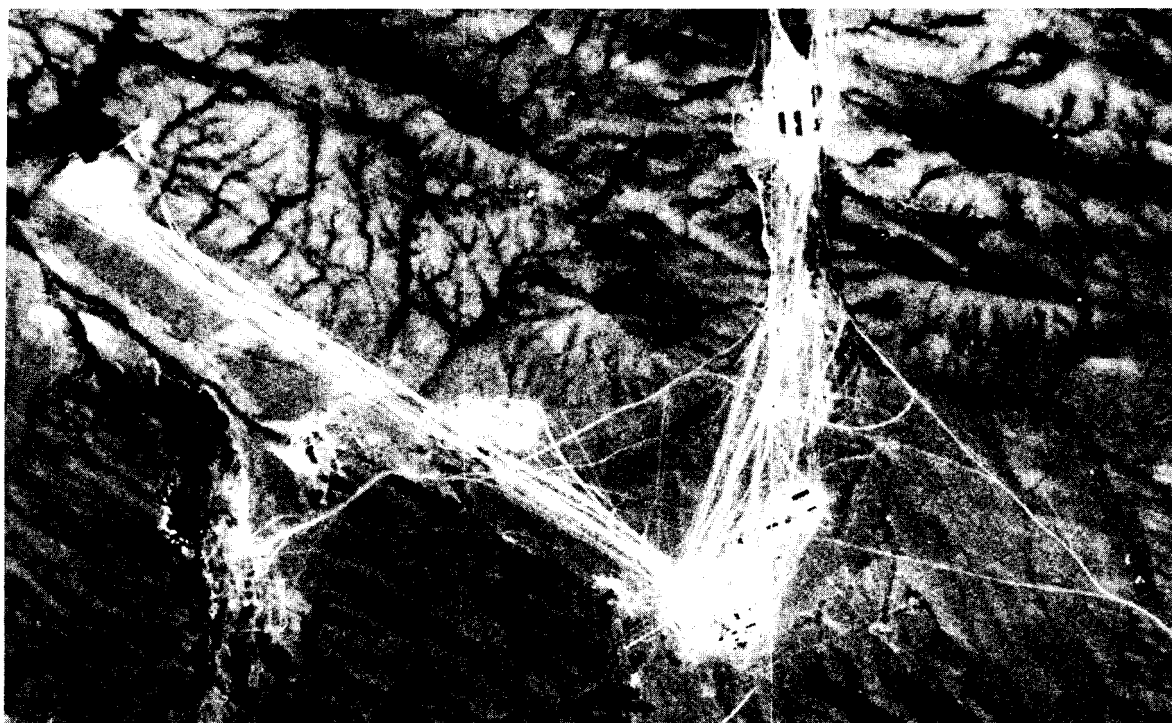


FIGURE 14. LAUNCH SITE A(1), ZHANGIZ-TOBE ICBM COMPLEX.

NPIC J-2840 (1/85)

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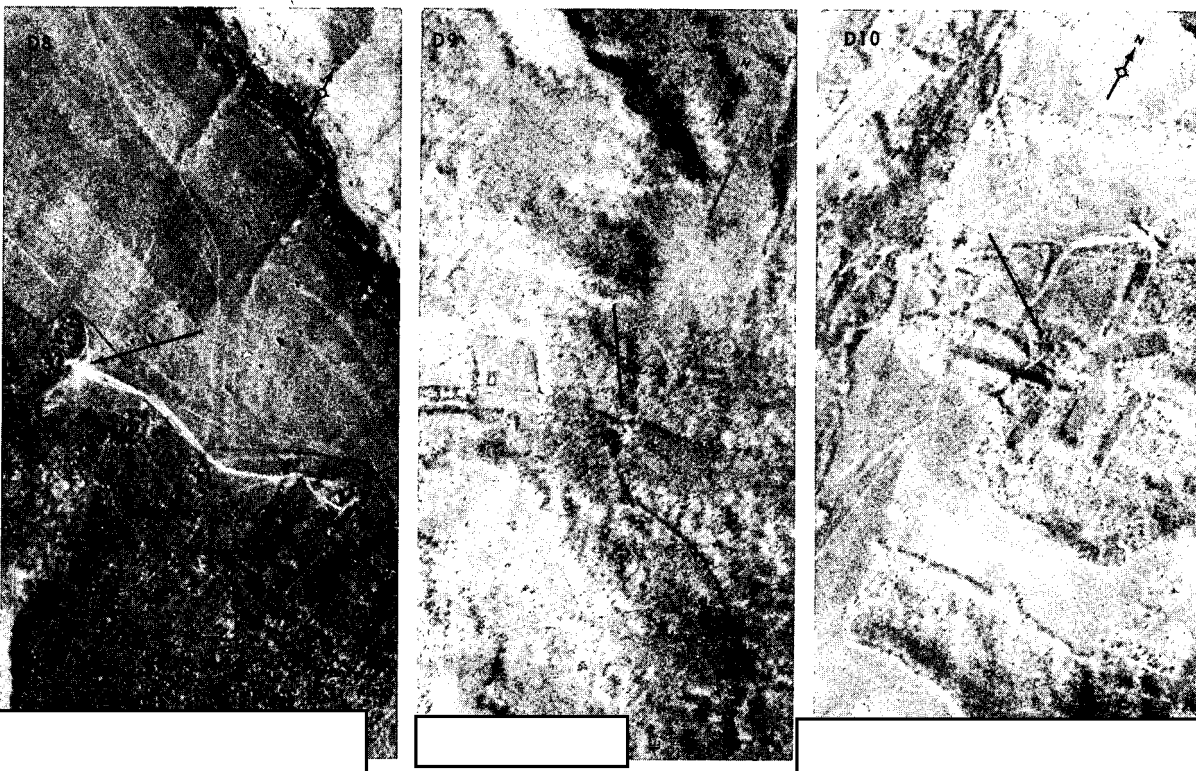
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FIGURE 15. LAUNCH SITE D7(6), LAUNCH GROUP D, OLOVYANNAYA ICBM COMPLEX.

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FIGURE 16. PROBABLE LAUNCH SITES D8, D9, AND D10, LAUNCH GROUP D, OLOVYANNAYA ICBM COMPLEX.

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FIGURE 17. CABLE DITCHING, LAUNCH GROUP D, OLOVYANNAYA ICBM COMPLEX.

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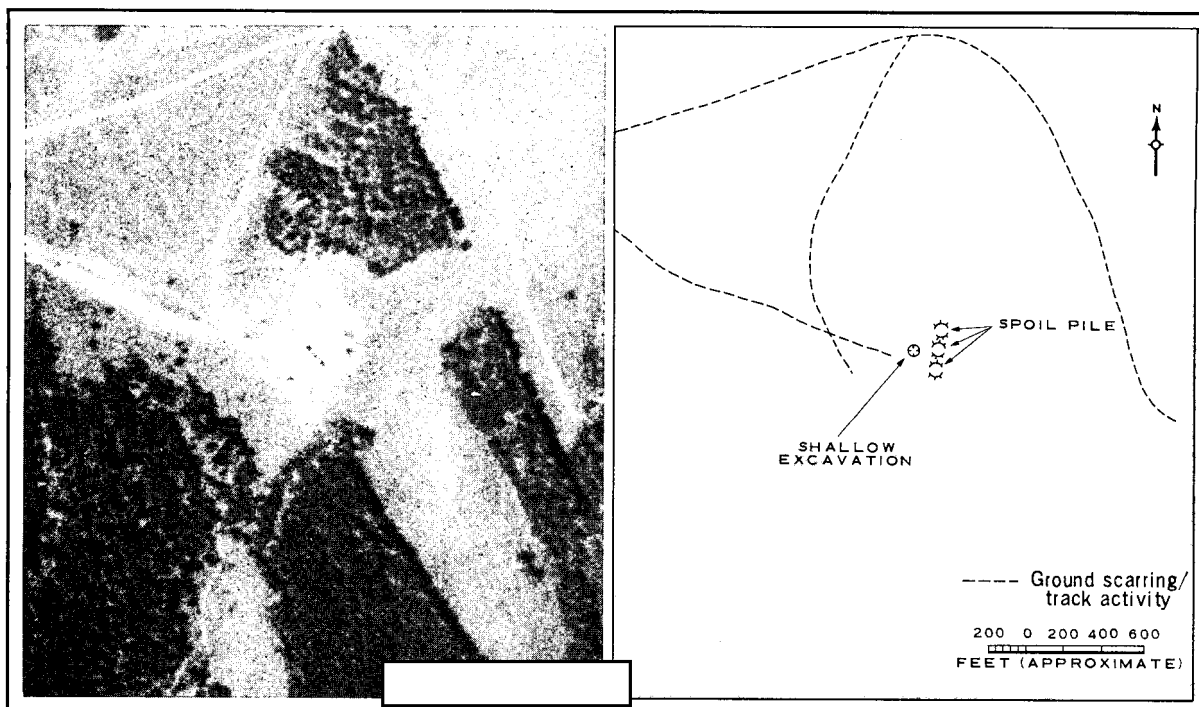


FIGURE 18. LAUNCH SITE D2(2), LAUNCH GROUP D, OLOVYANNAYA ICBM COMPLEX.

NPIC J-4518 (1/65)



FIGURE 19. LAUNCH SITE E(6), GLADKAYA ICBM COMPLEX.

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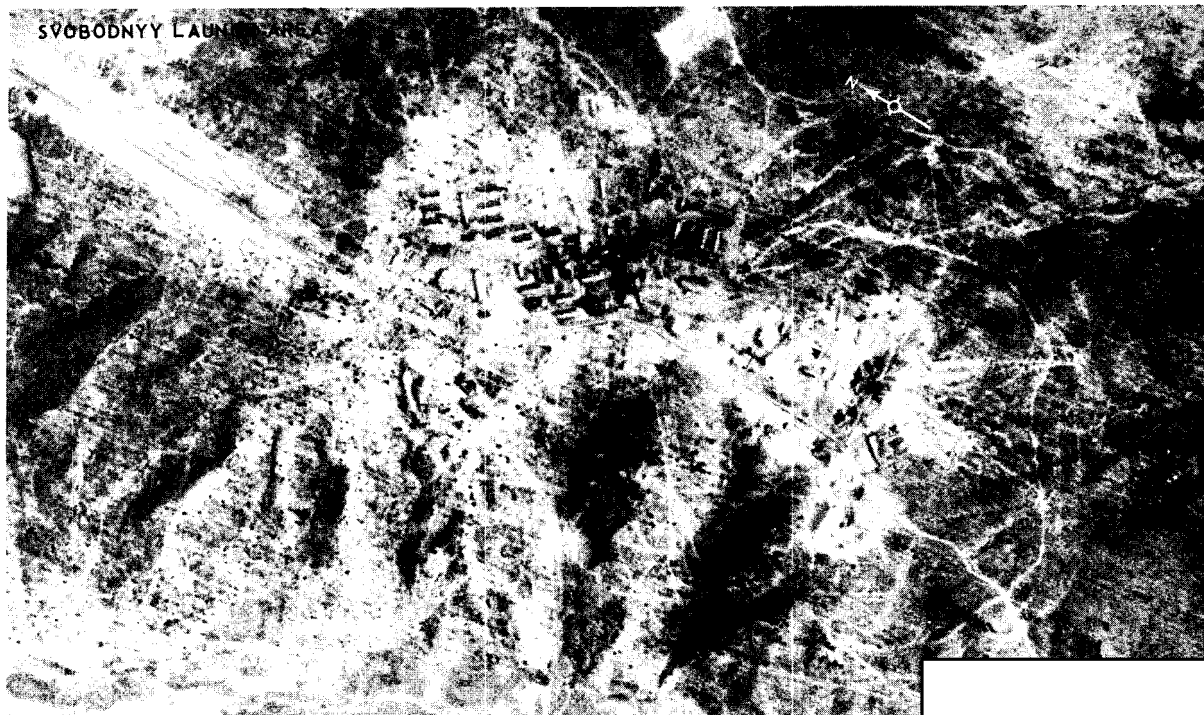
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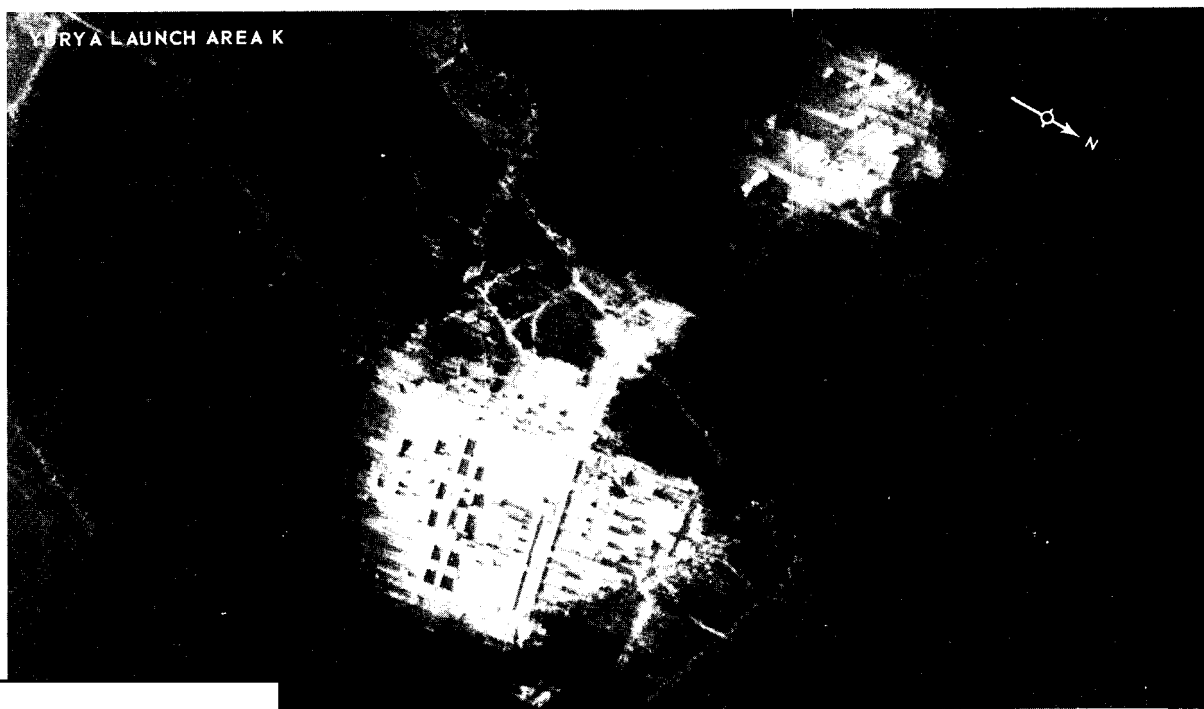
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FIGURE 20. LAUNCH SITE G(7), SVOBODNY ICBM COMPLEX AND LAUNCH SITE K(10), YURYA ICBM COMPLEX.

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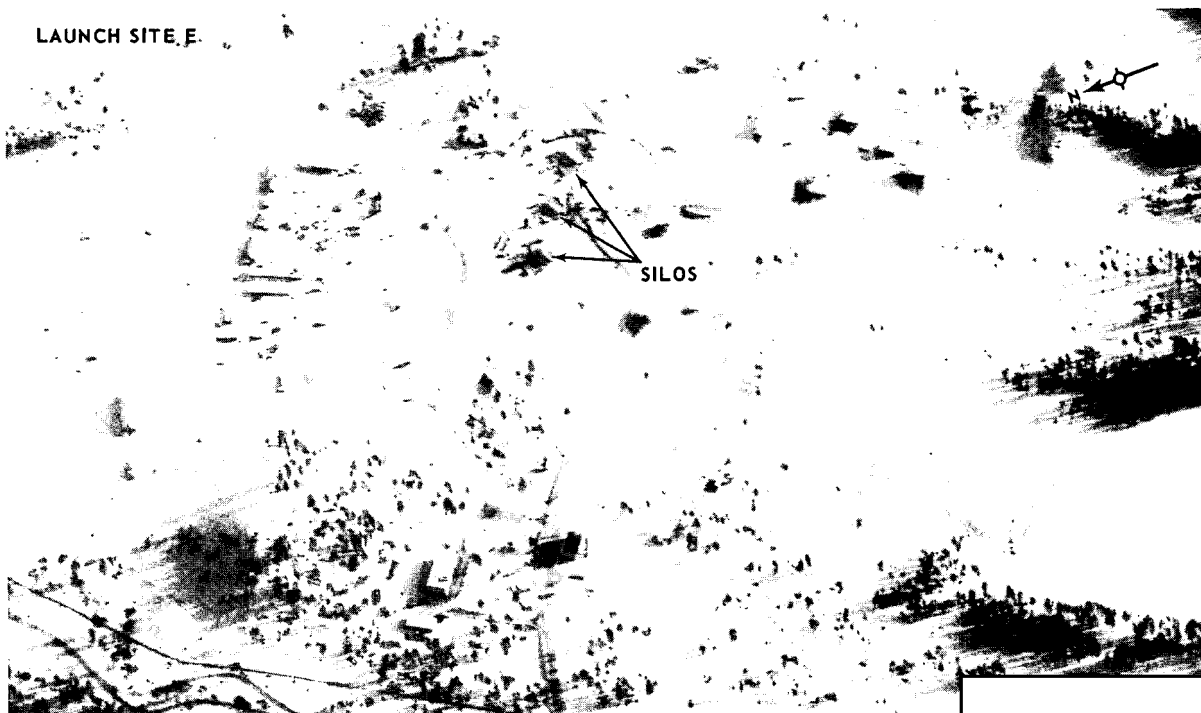
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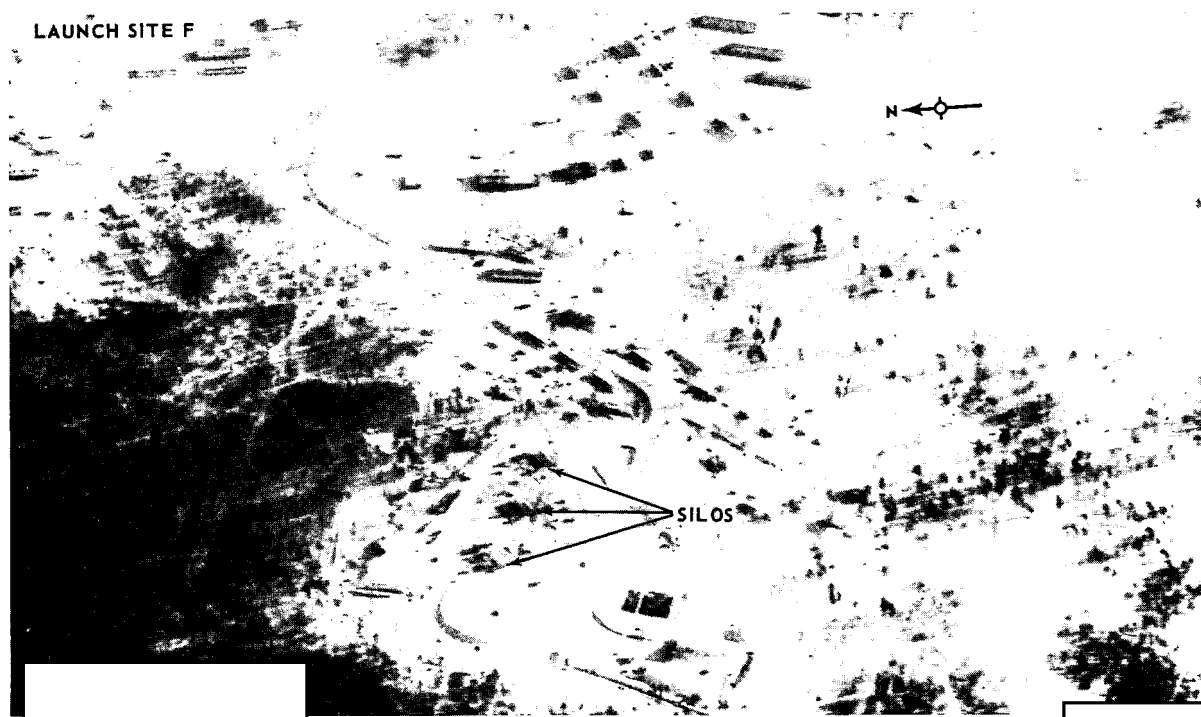
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FIGURE 21. LAUNCH SITES E(5) AND F(6), DROVYANAYA ICBM COMPLEX.

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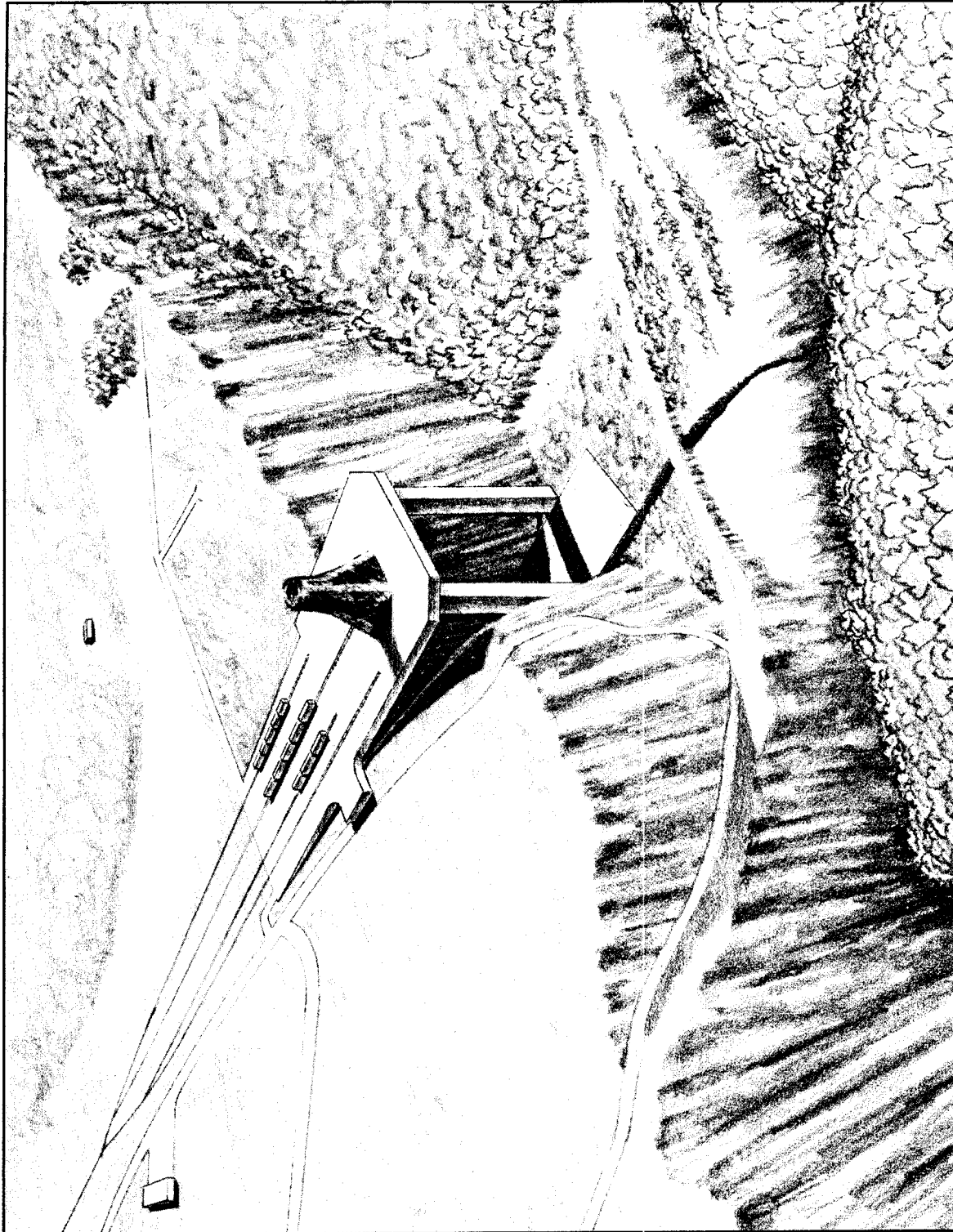


FIGURE 22. ARTIST'S CONCEPT OF TYPE IA ICBM LAUNCH SITE.

NPIC J-8029 (1/76)

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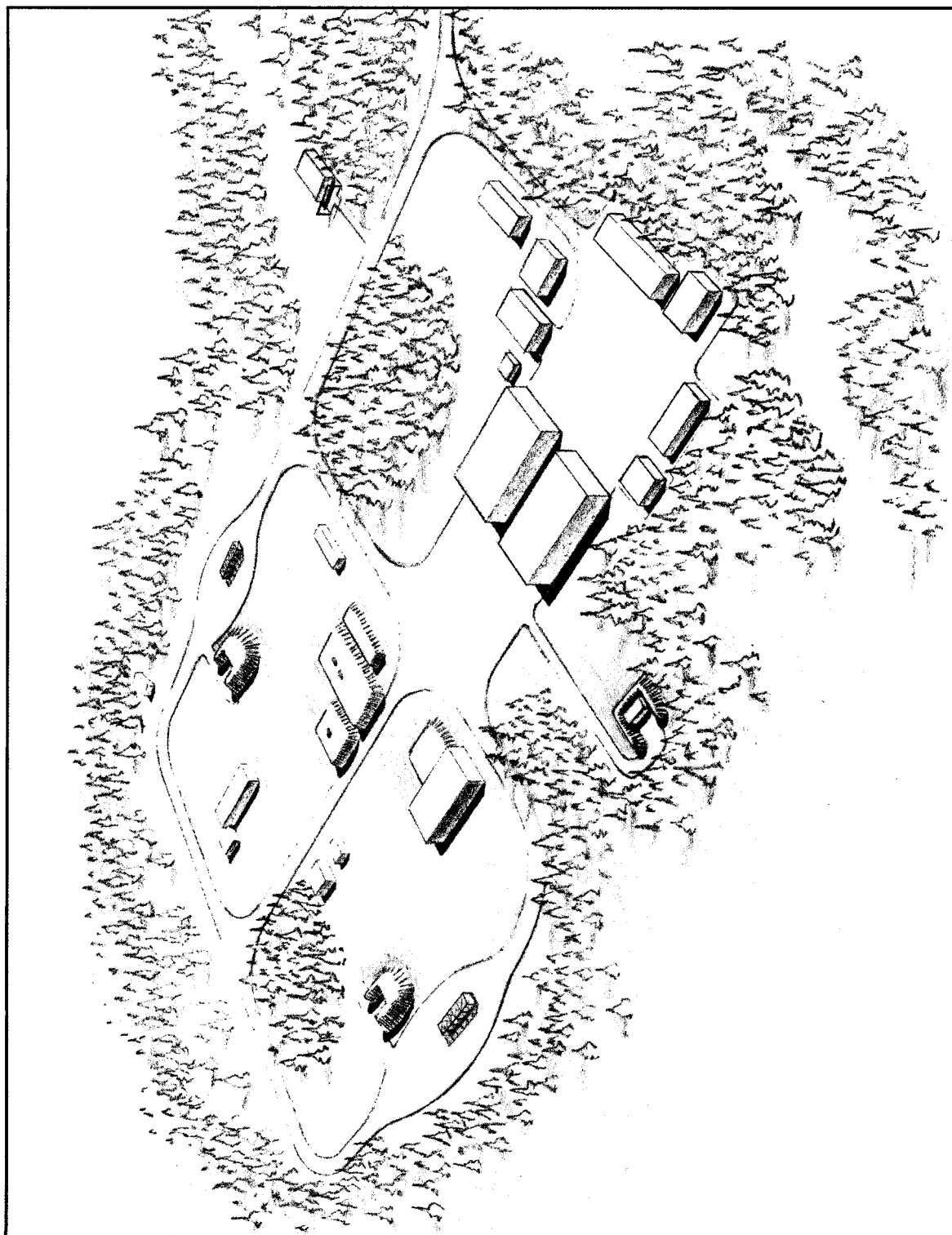


FIGURE 23. ARTIST'S CONCEPT OF TYPE IIA ICBM LAUNCH SITE.

NPIC J-8030 (1/65)

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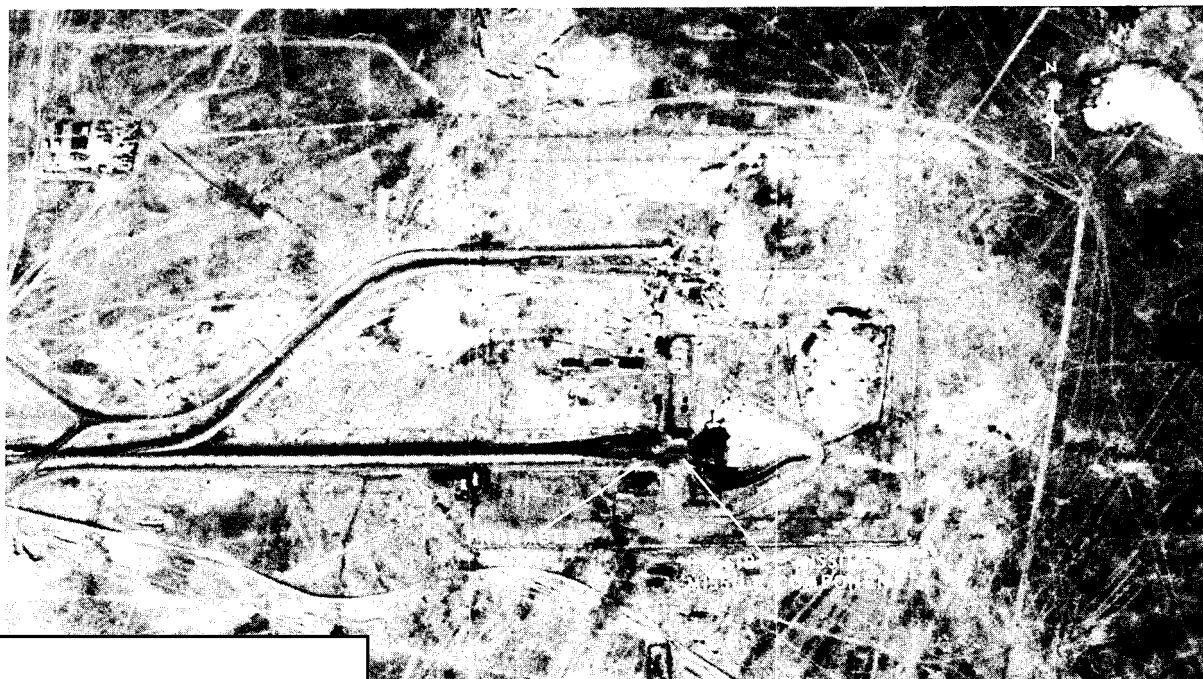
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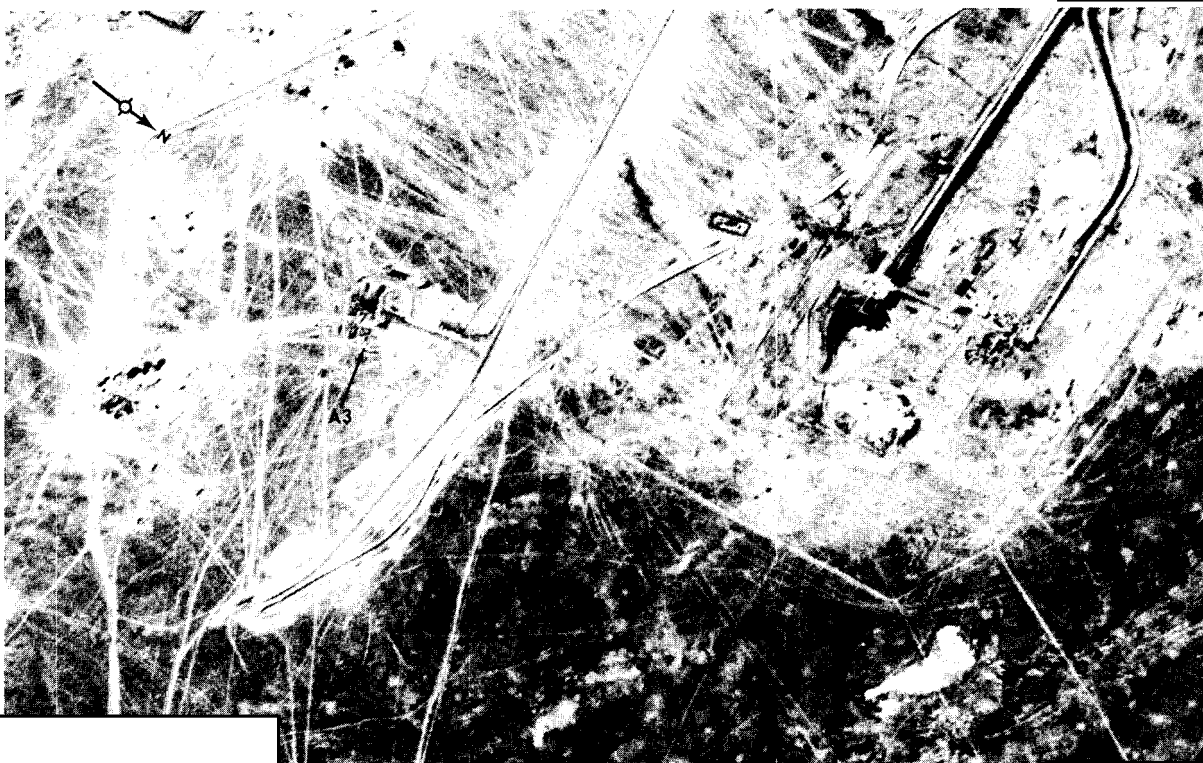
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FIGURE 24. PAD A1(1), TYURATAM.



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FIGURE 25. LAUNCH SITE A3(15), TYURATAM.

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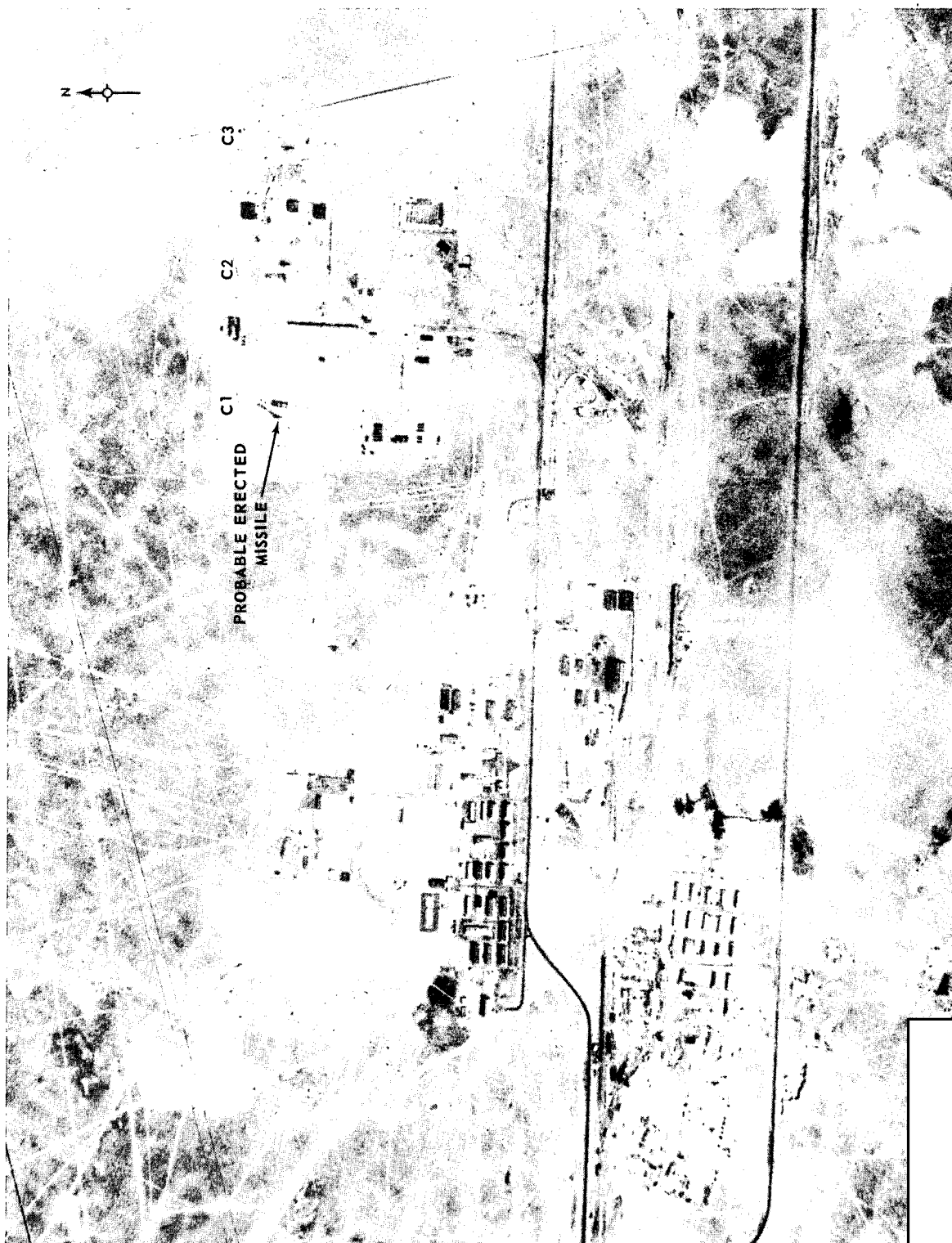


FIGURE 26. PROBABLE ERRECTED MISSILE, PAD C1(3), TYURATAM.

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FIGURE 27. LAUNCH SITE D2(9), TYURATAM.

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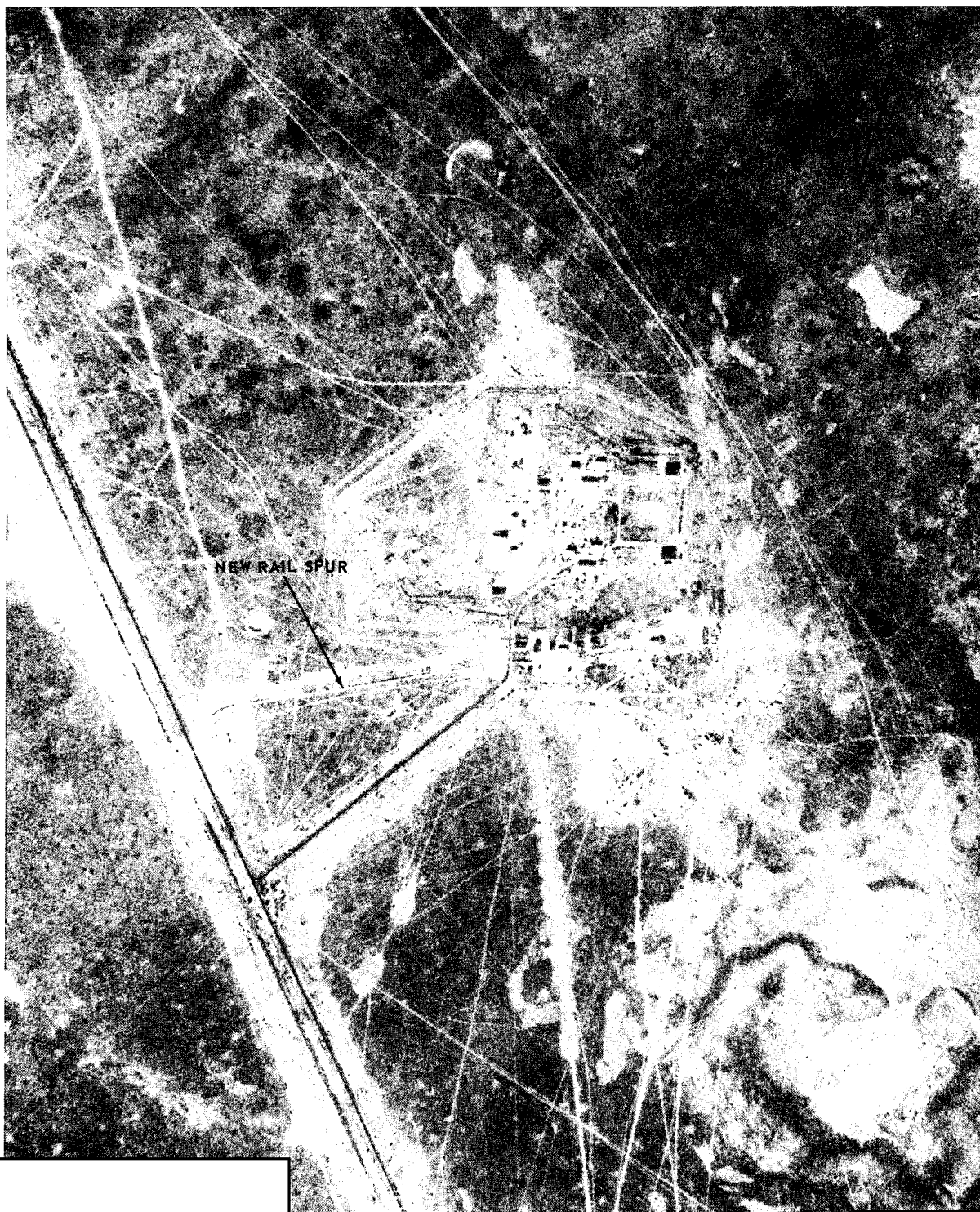
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FIGURE 28. LAUNCH COMPLEX E(6), TYURATAM.

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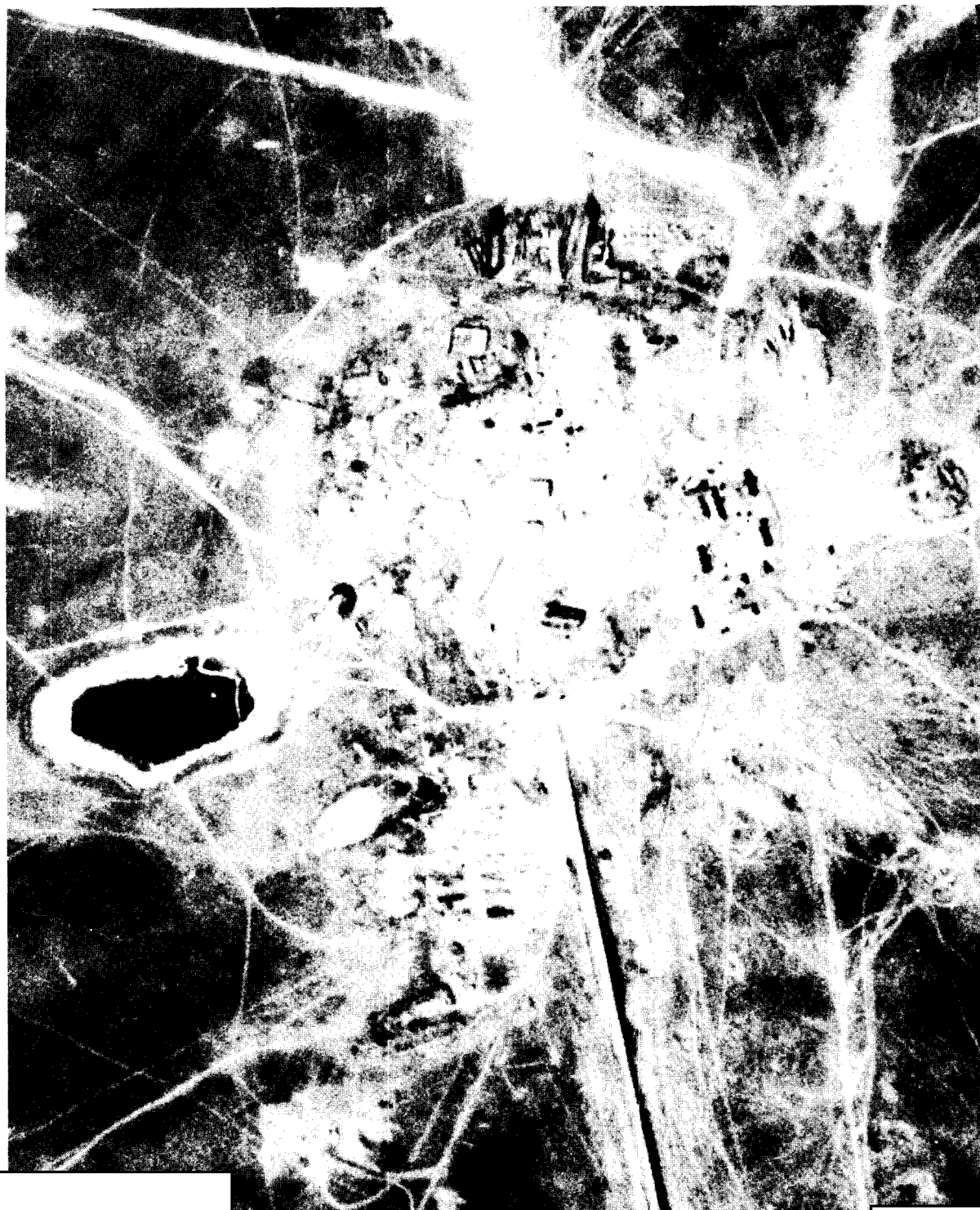
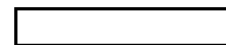
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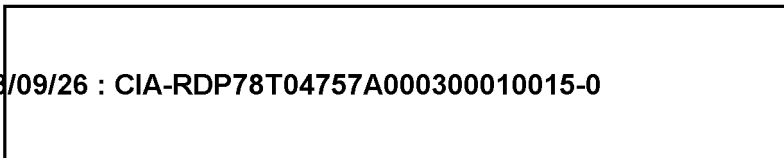
FIGURE 29. LAUNCH COMPLEX F(5), TYURATAM.



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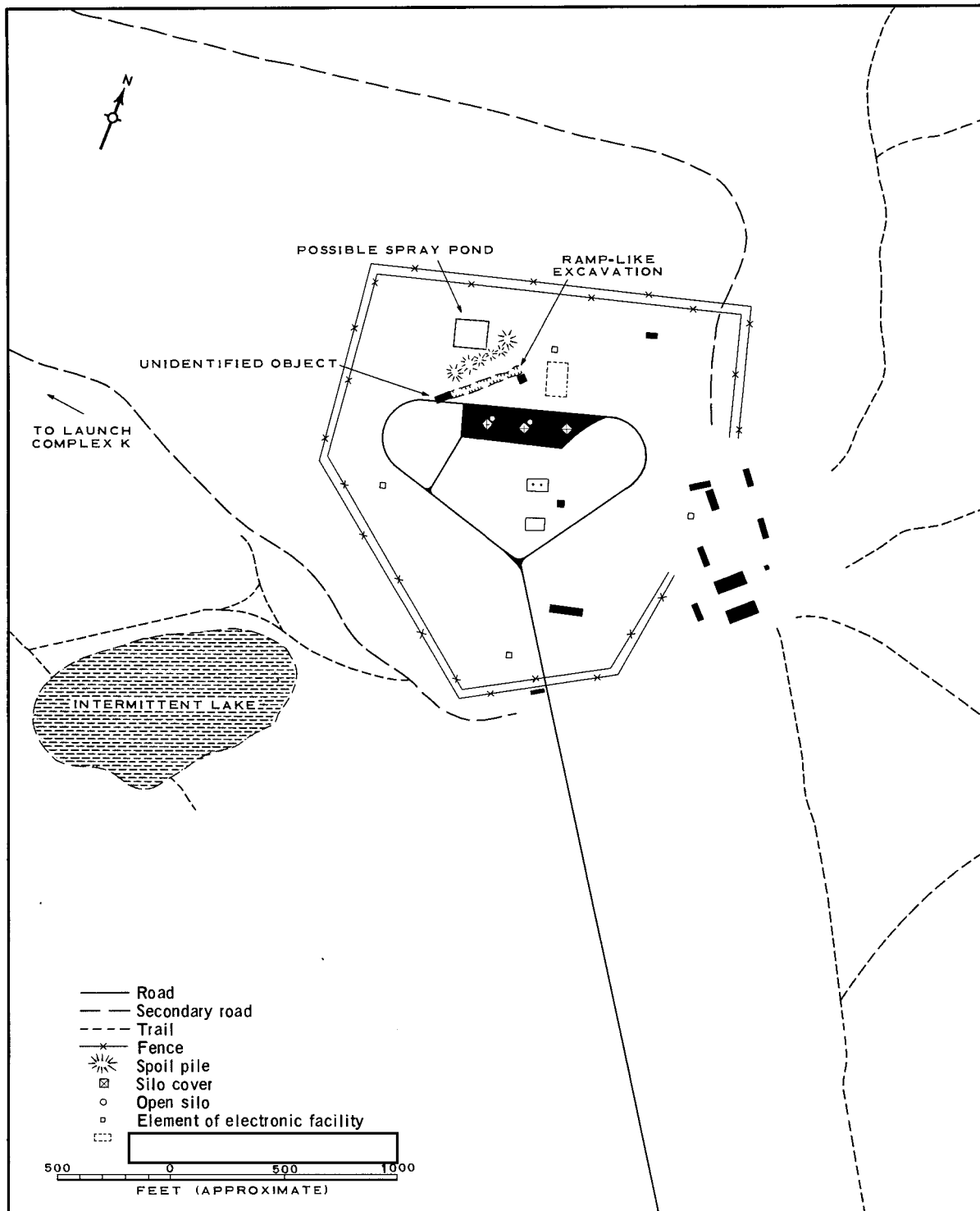


FIGURE 30. LAYOUT OF LAUNCH COMPLEX F(5), TYURATAM.

NPIC J-8037 (1/65)

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FIGURE 31. LAUNCH SITE G1/G2(7), TYURATAM.

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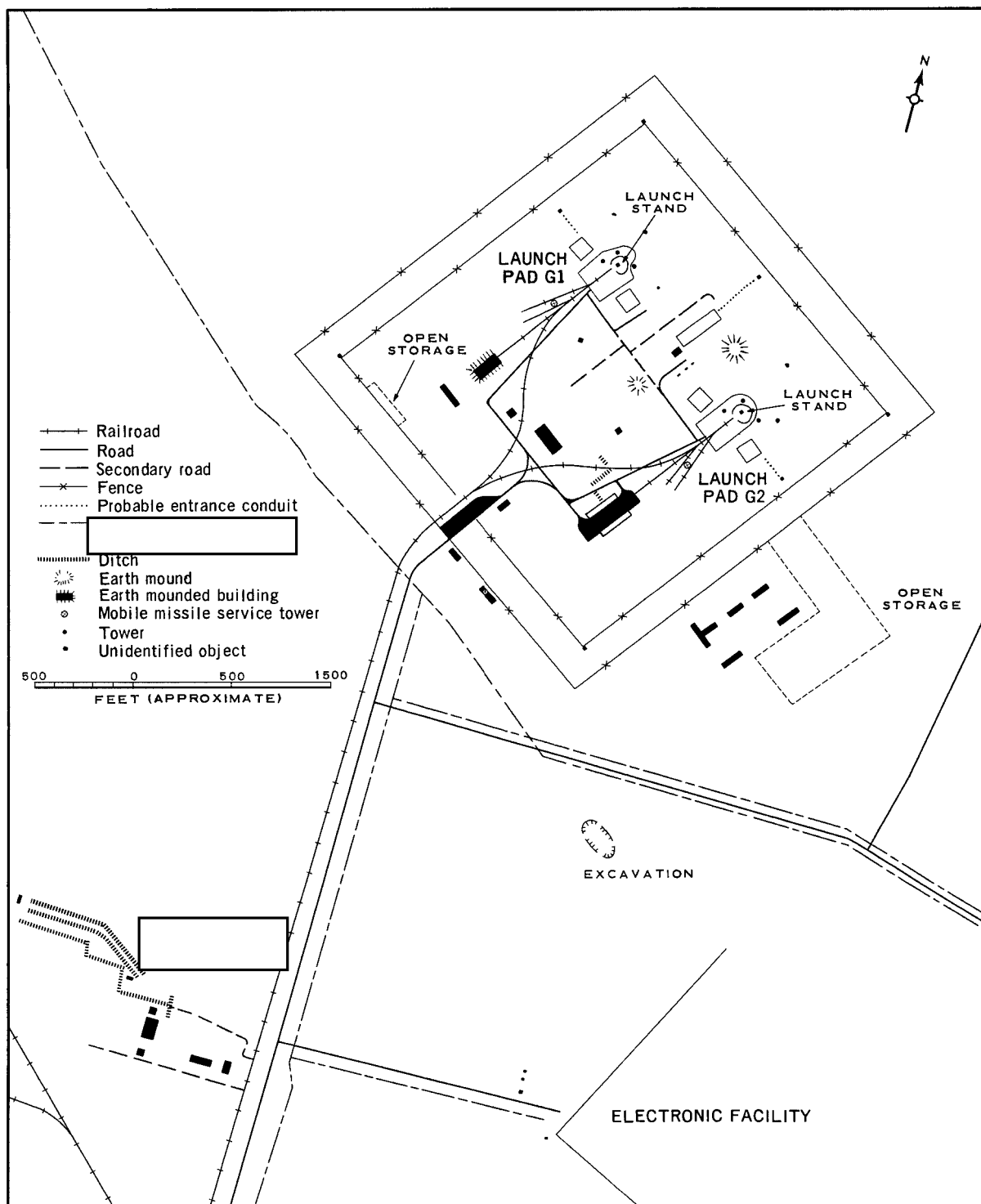


FIGURE 32. LAYOUT OF LAUNCH SITE G1/G2(7), TYURATAM.

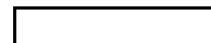
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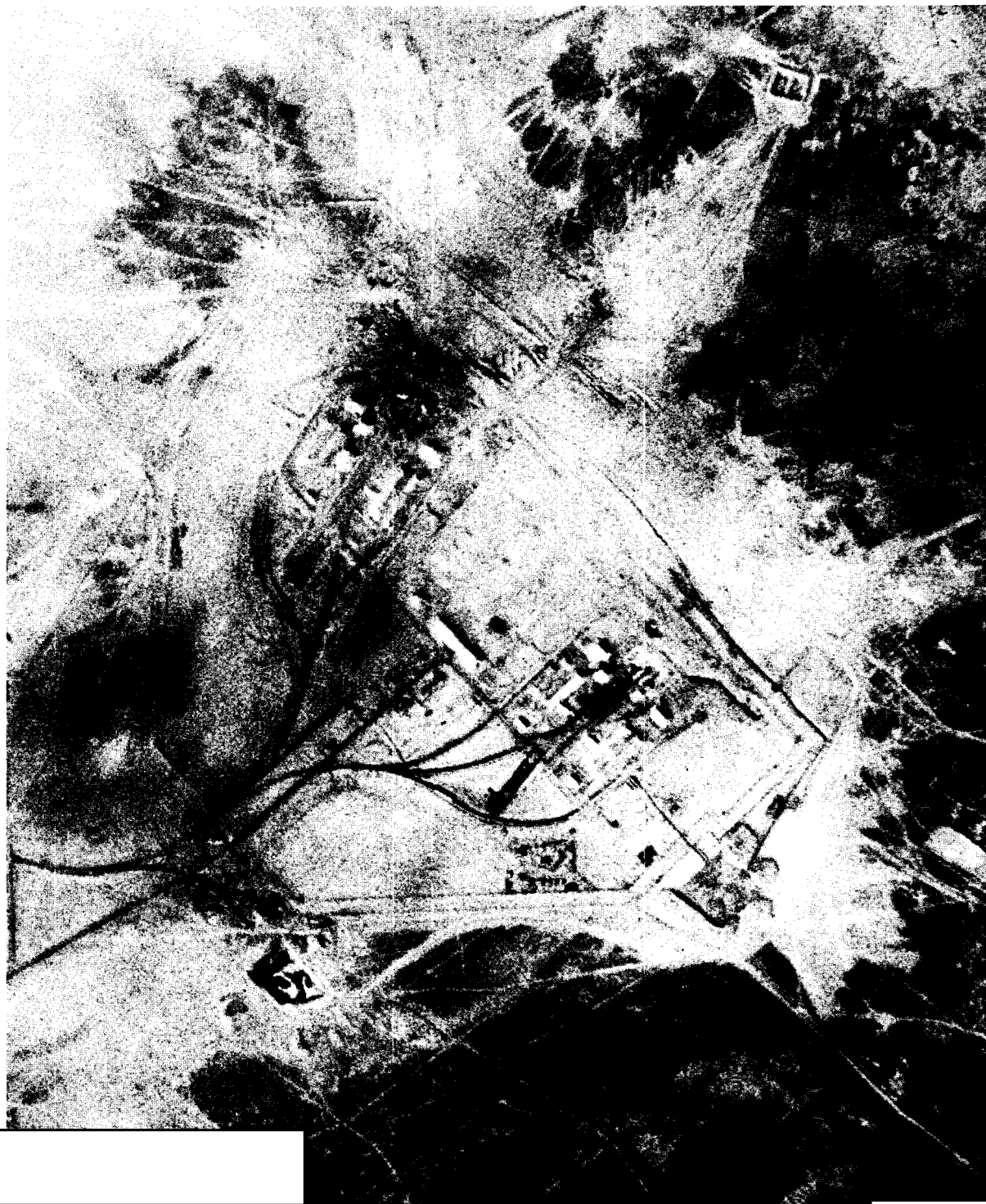
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FIGURE 33. LAUNCH SITE G3/G4(11), TYURATAM.

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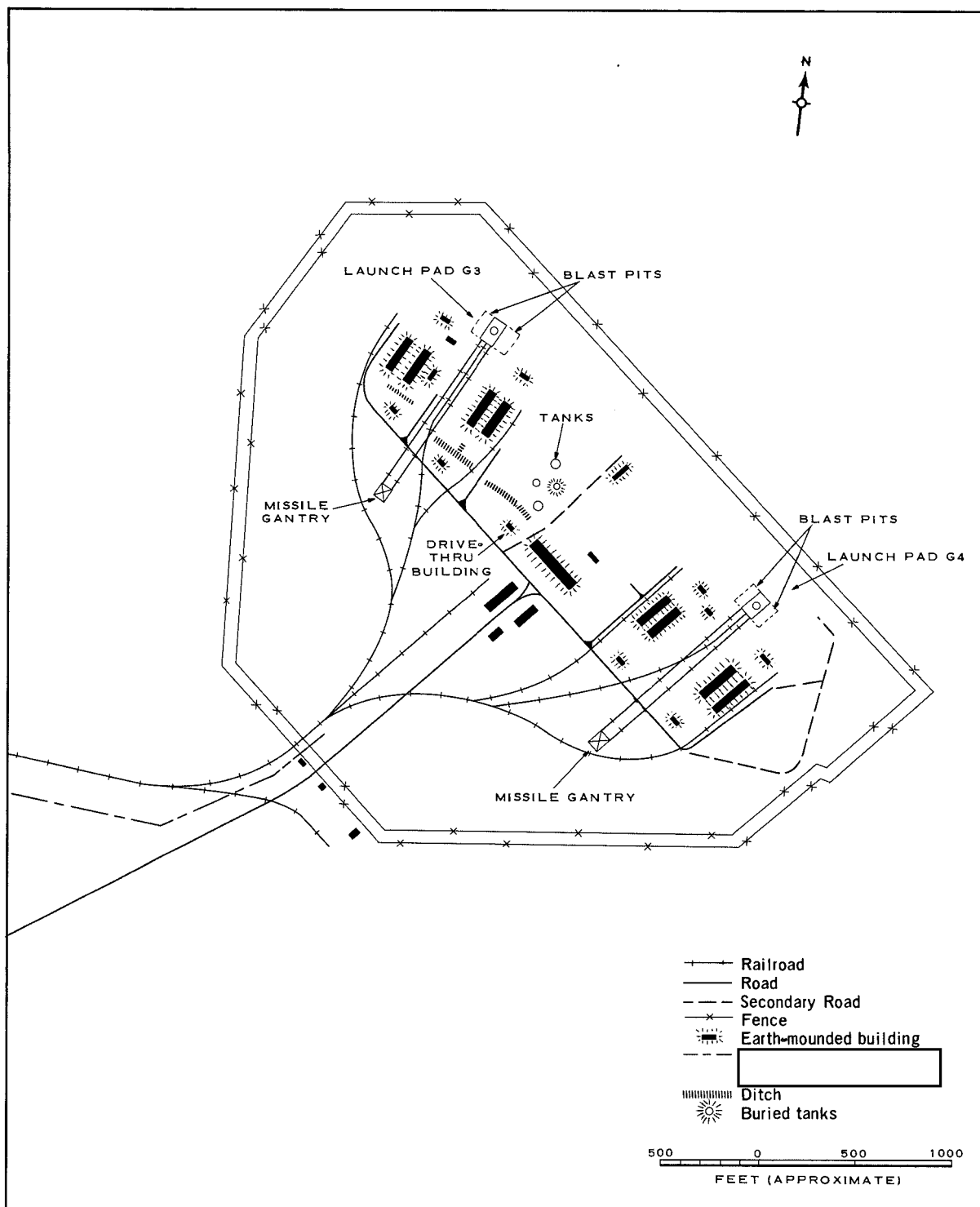


FIGURE 34. LAYOUT OF LAUNCH SITE G3/G4(11), TYURATAM.

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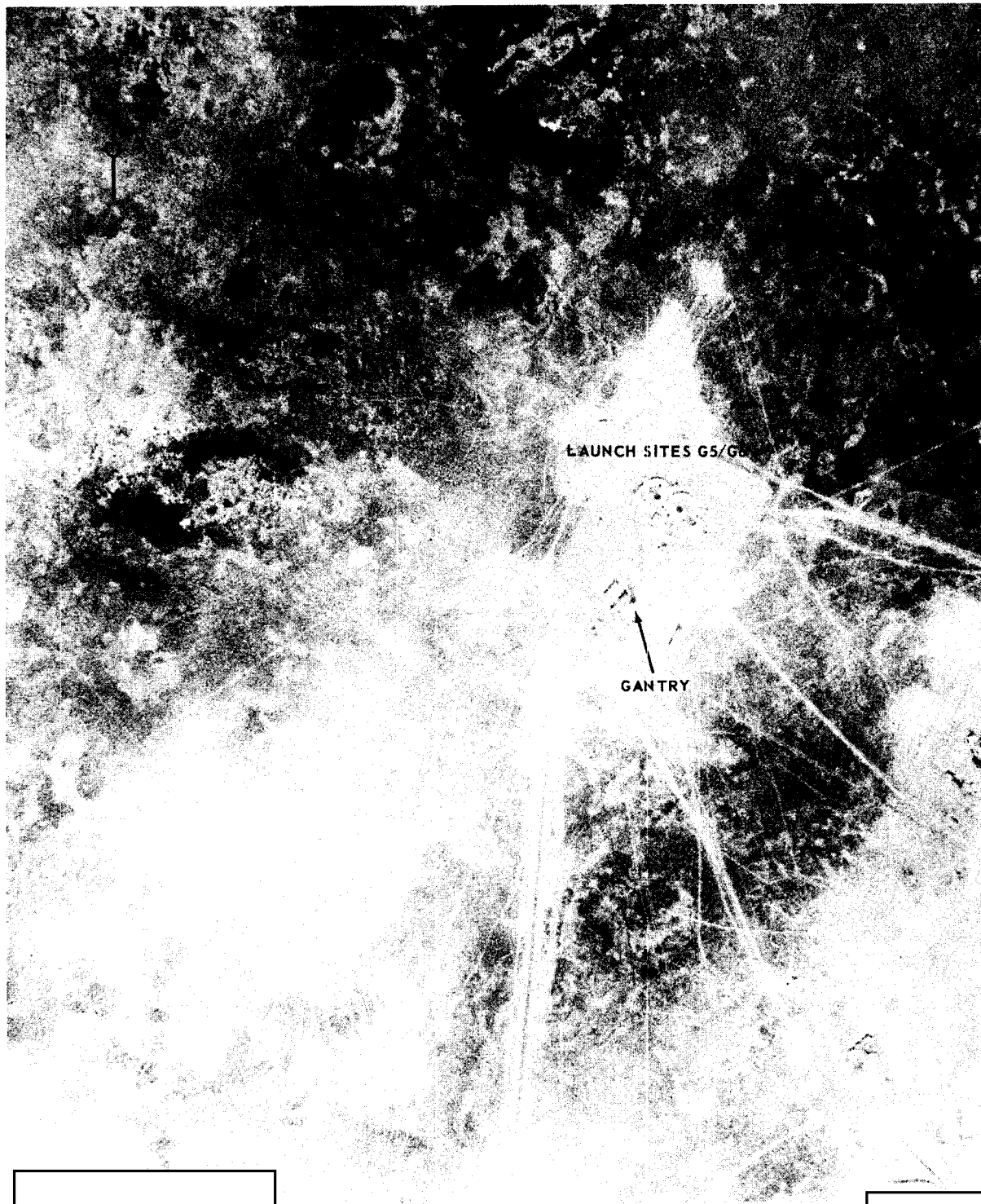


FIGURE 35. LAUNCH SITE G5/G6(12), TYURATAM.

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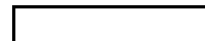
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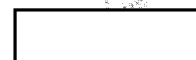
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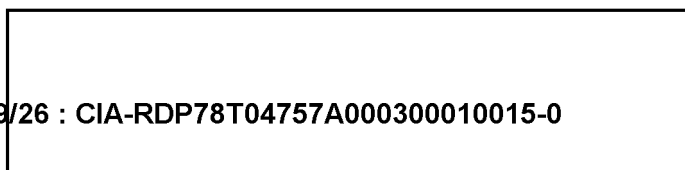
FIGURE 36. LAUNCH SITE G7(18), TYURATAM.



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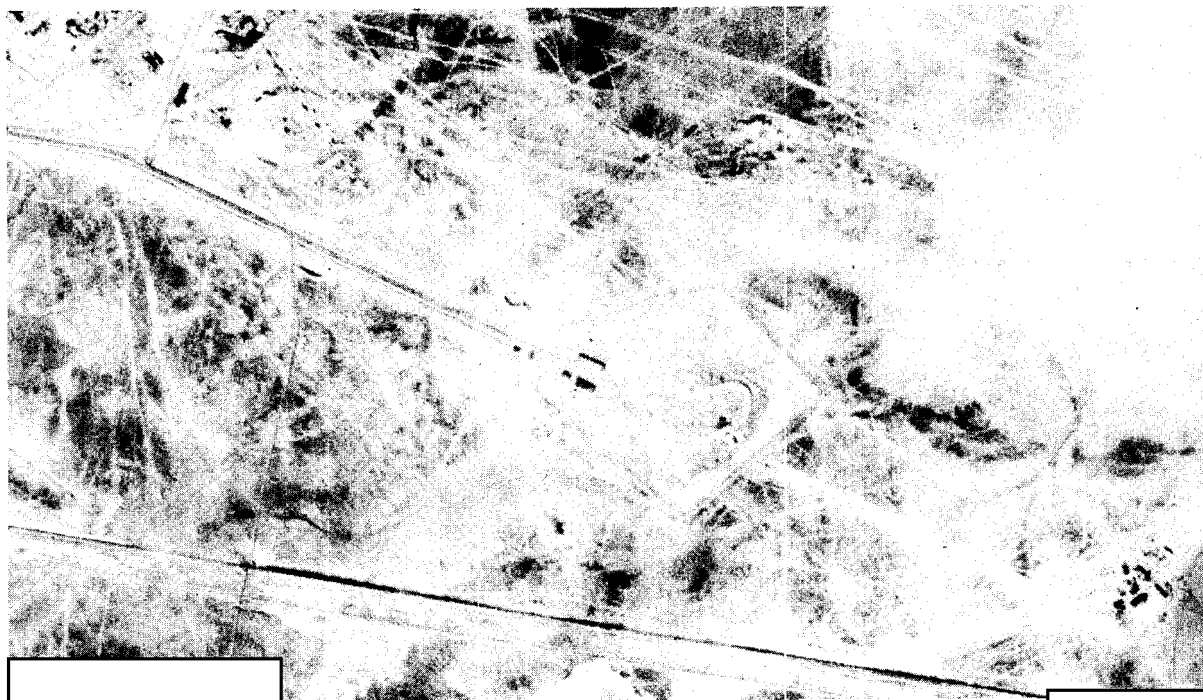
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FIGURE 37. LAUNCH SITE G8/G9(19), TYURATAM, IN MID (TOP) AND LATE (BOTTOM) STAGES OF CONSTRUCTION.

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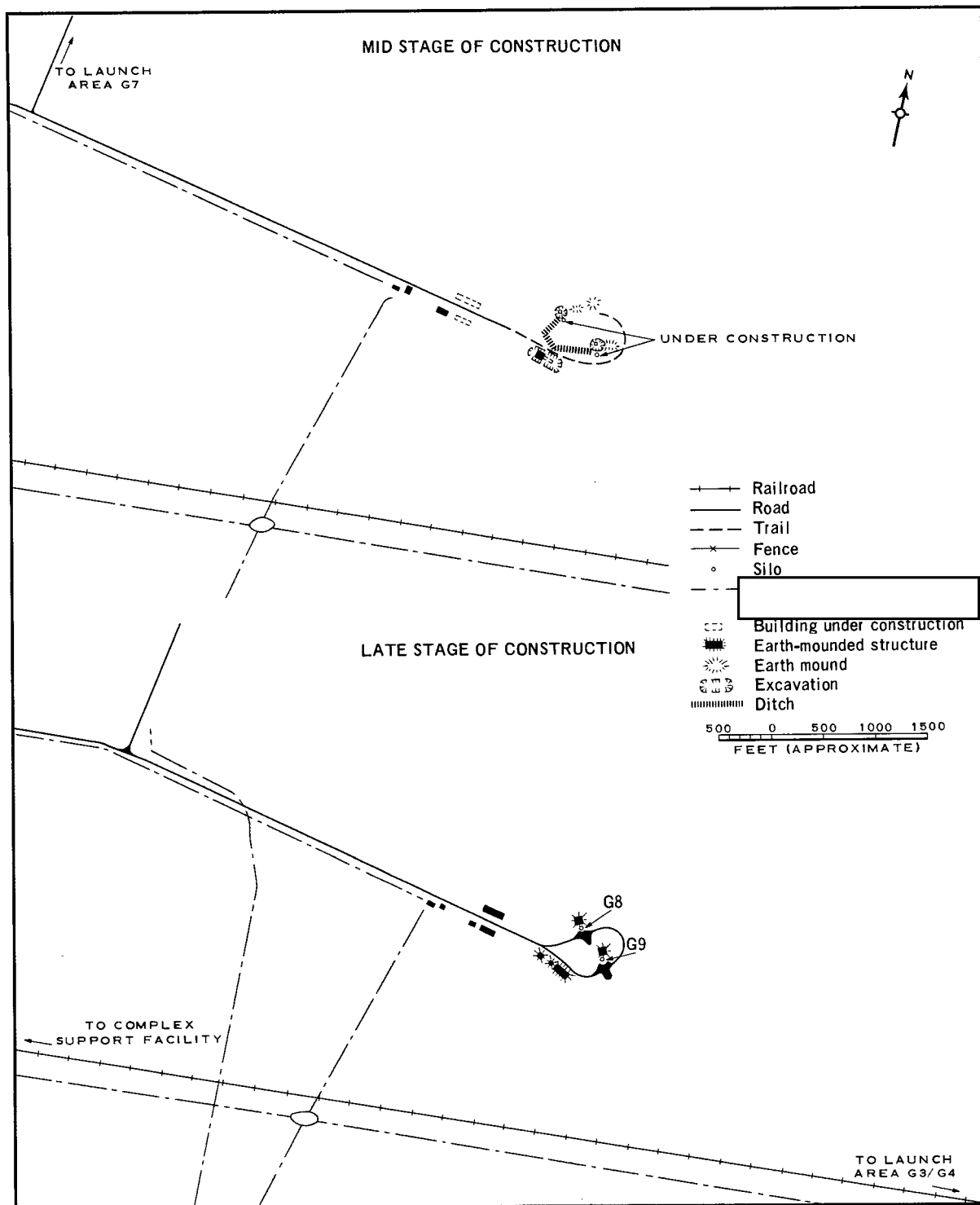


FIGURE 38. LAYOUT OF LAUNCH SITE G8/G9(19), TYURATAM, IN MID (TOP) AND LATE (BOTTOM) STAGES OF CONSTRUCTION.

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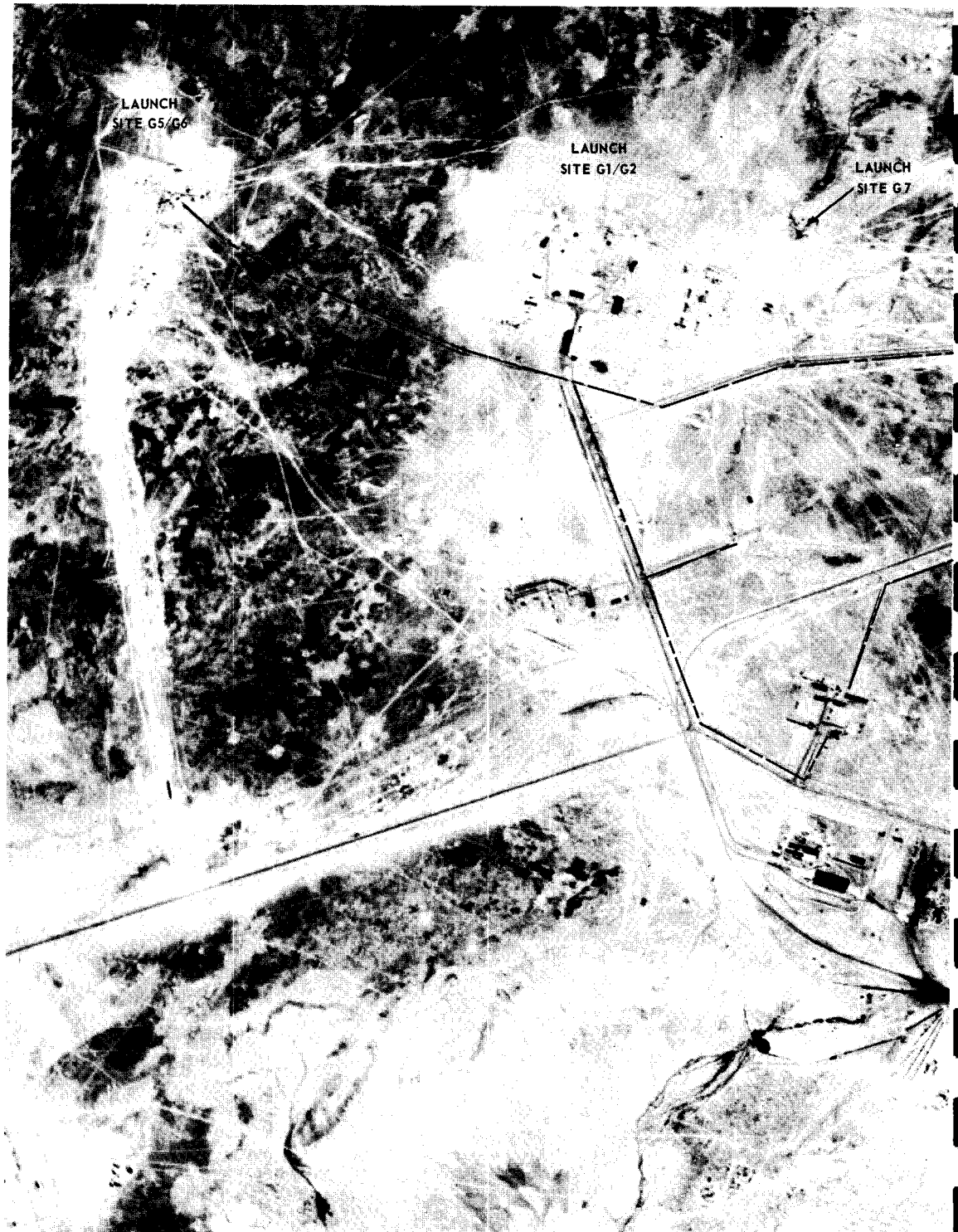
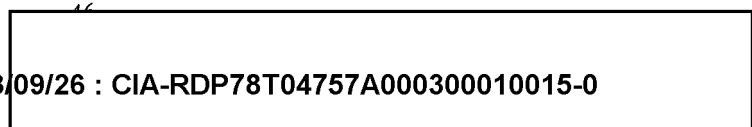


FIGURE 39. CABLE DITCHING,

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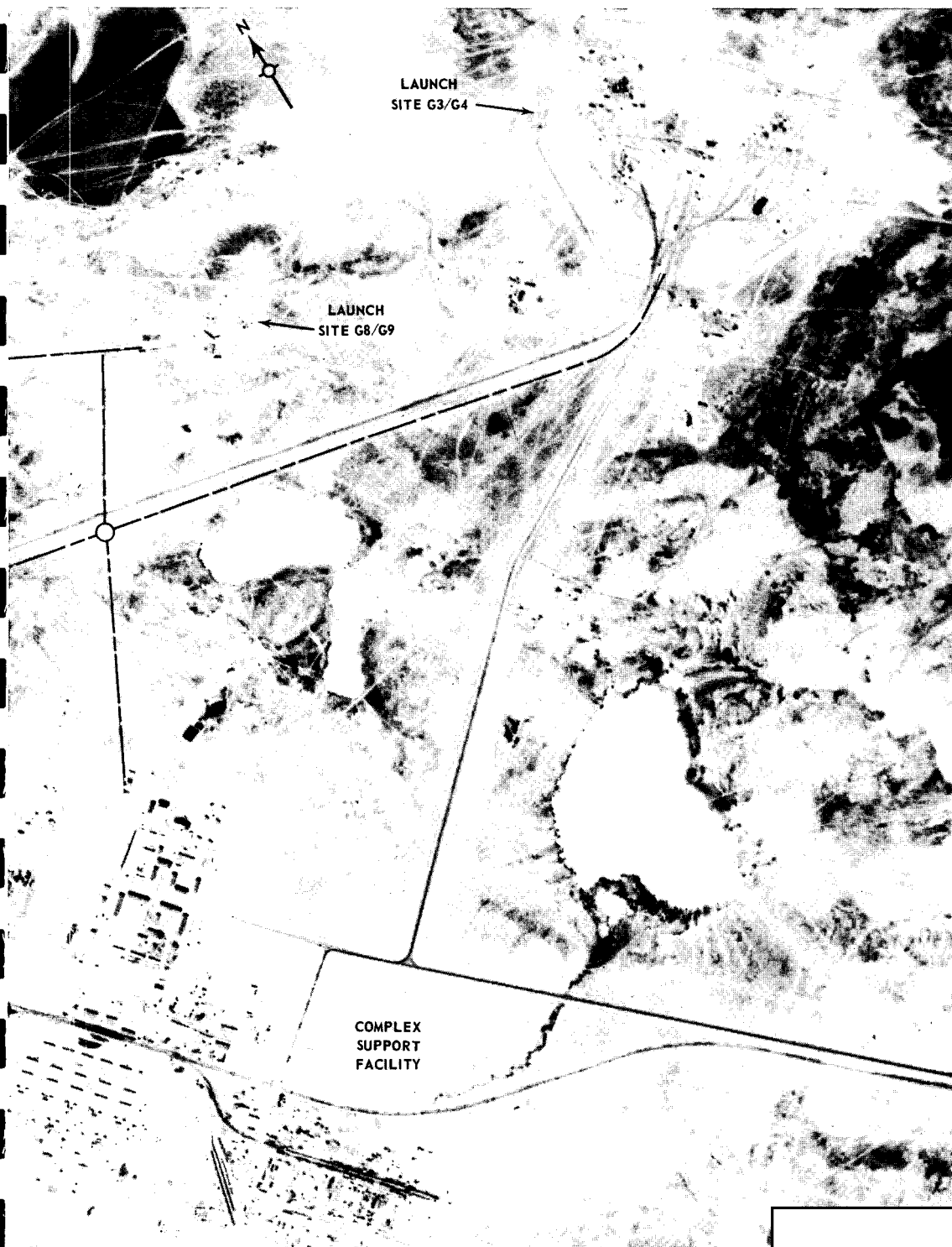
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LAUNCH COMPLEX G, TYURATAM.

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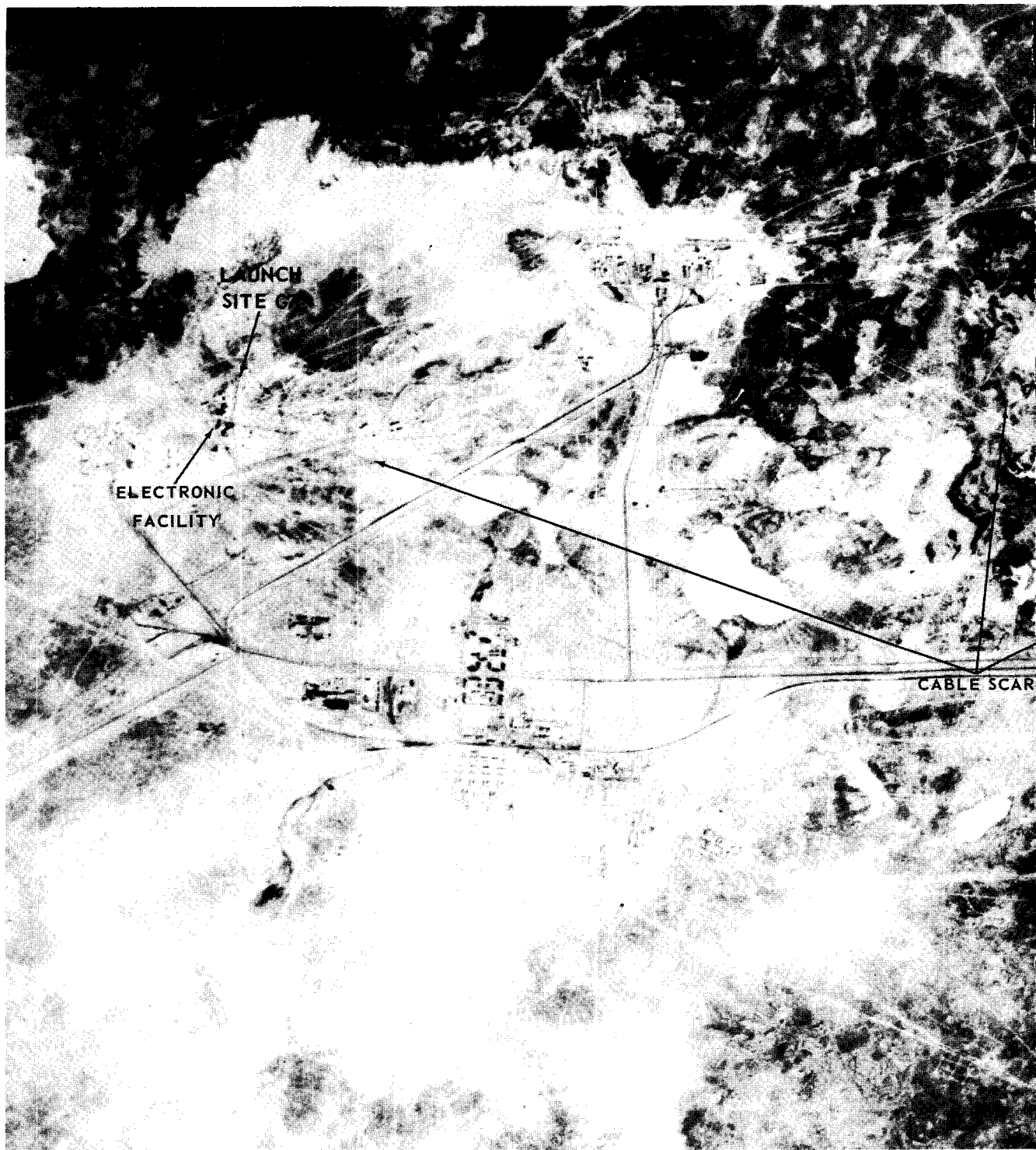


FIGURE 40. PROBABLE CABLE DITCHING UNDER CONSTRUCTION

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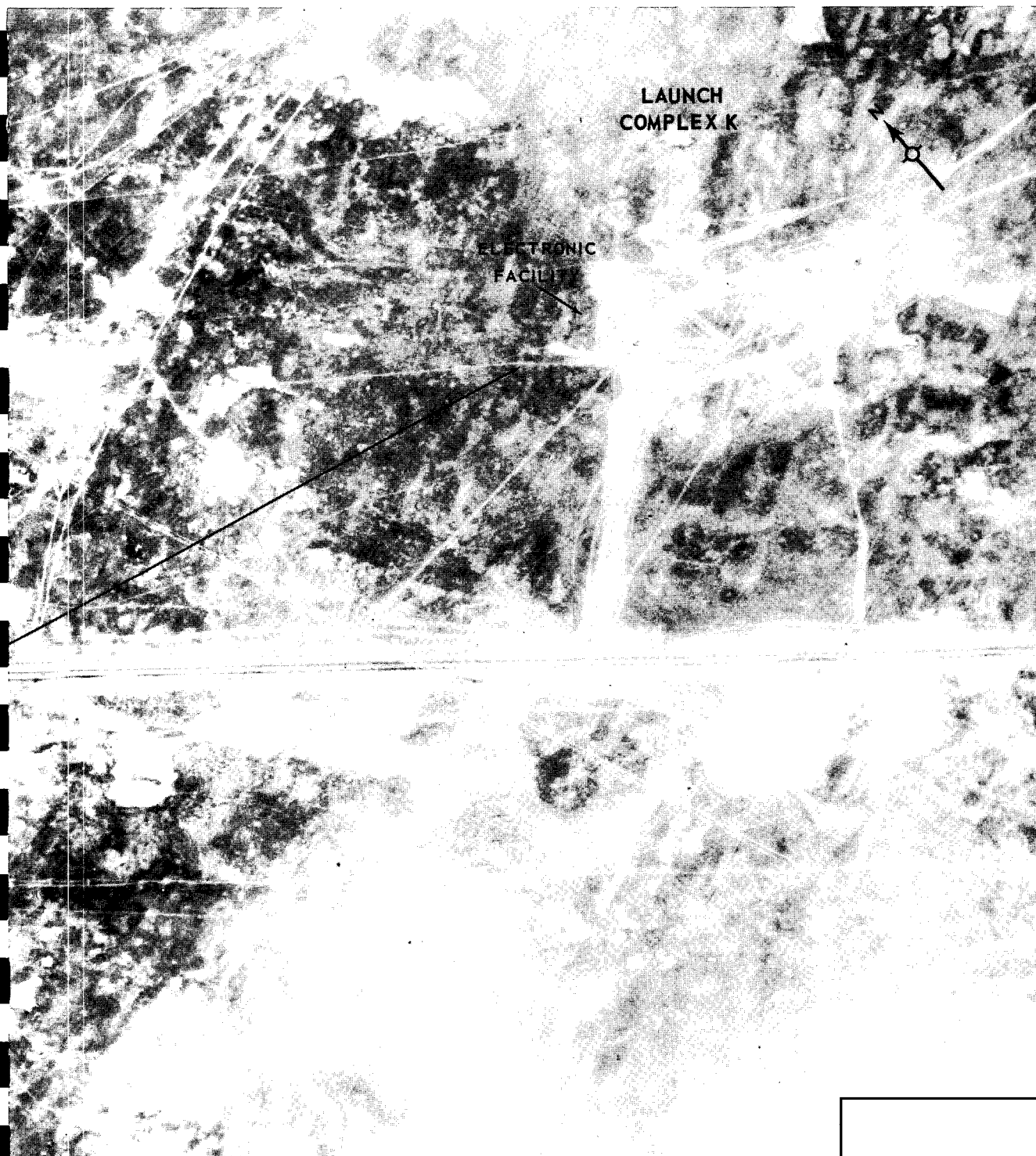
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BETWEEN LAUNCH SITE G7(18) AND LAUNCH COMPLEX K(13), TYURATAM.

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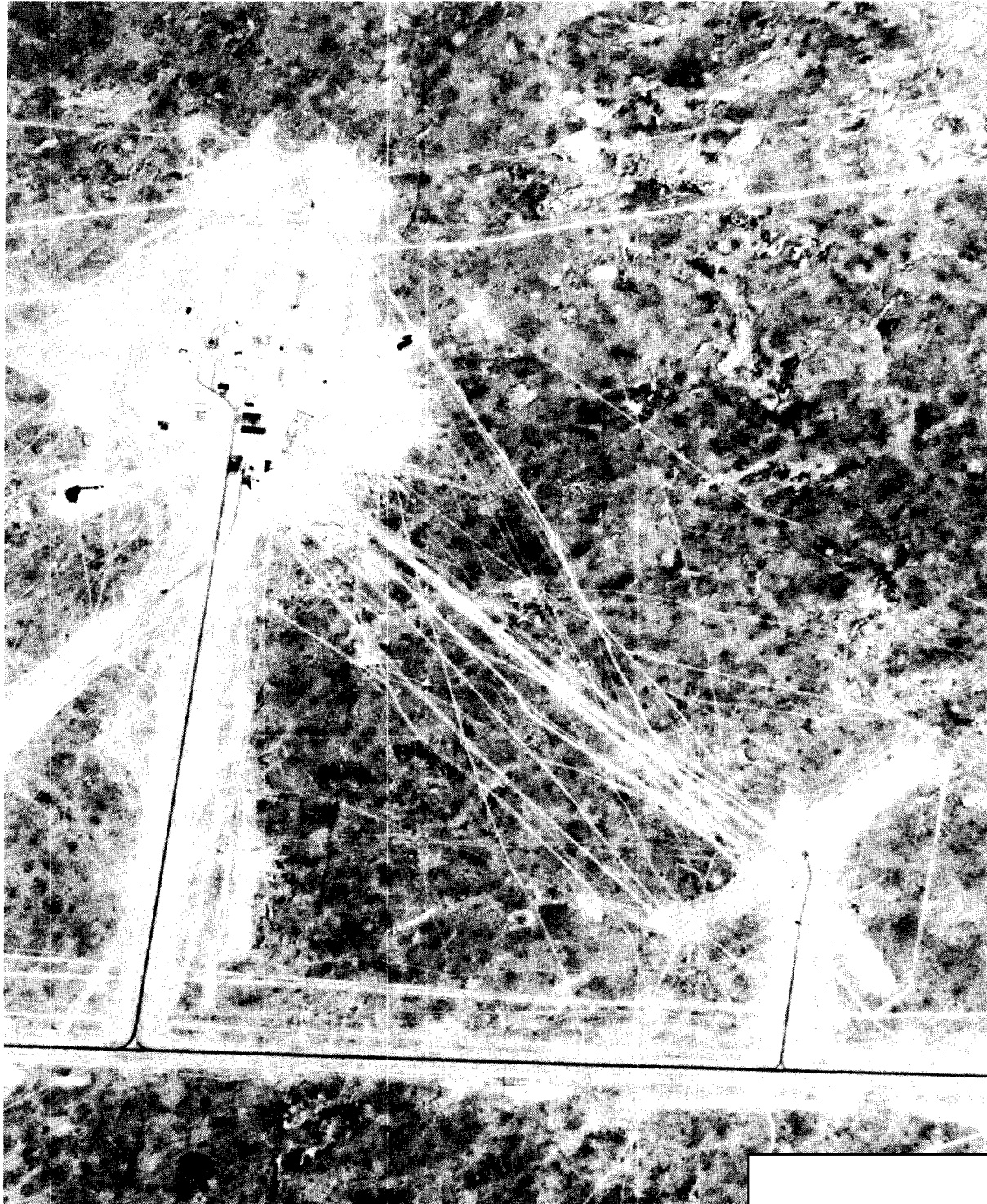
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FIGURE 41. LAUNCH COMPLEX H(8), TYURATAM.

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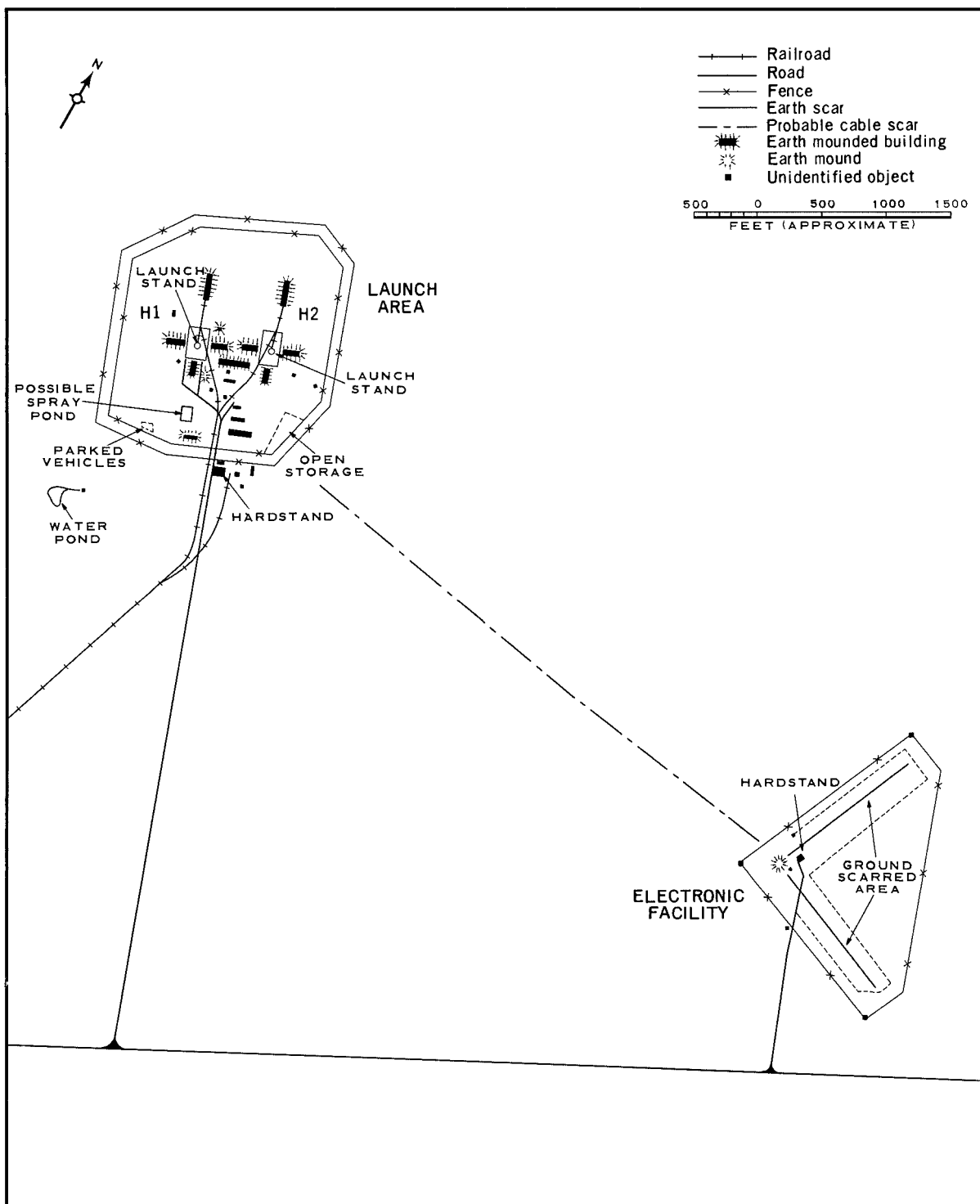


FIGURE 42. LAYOUT OF LAUNCH COMPLEX H(8), TYURATAM.

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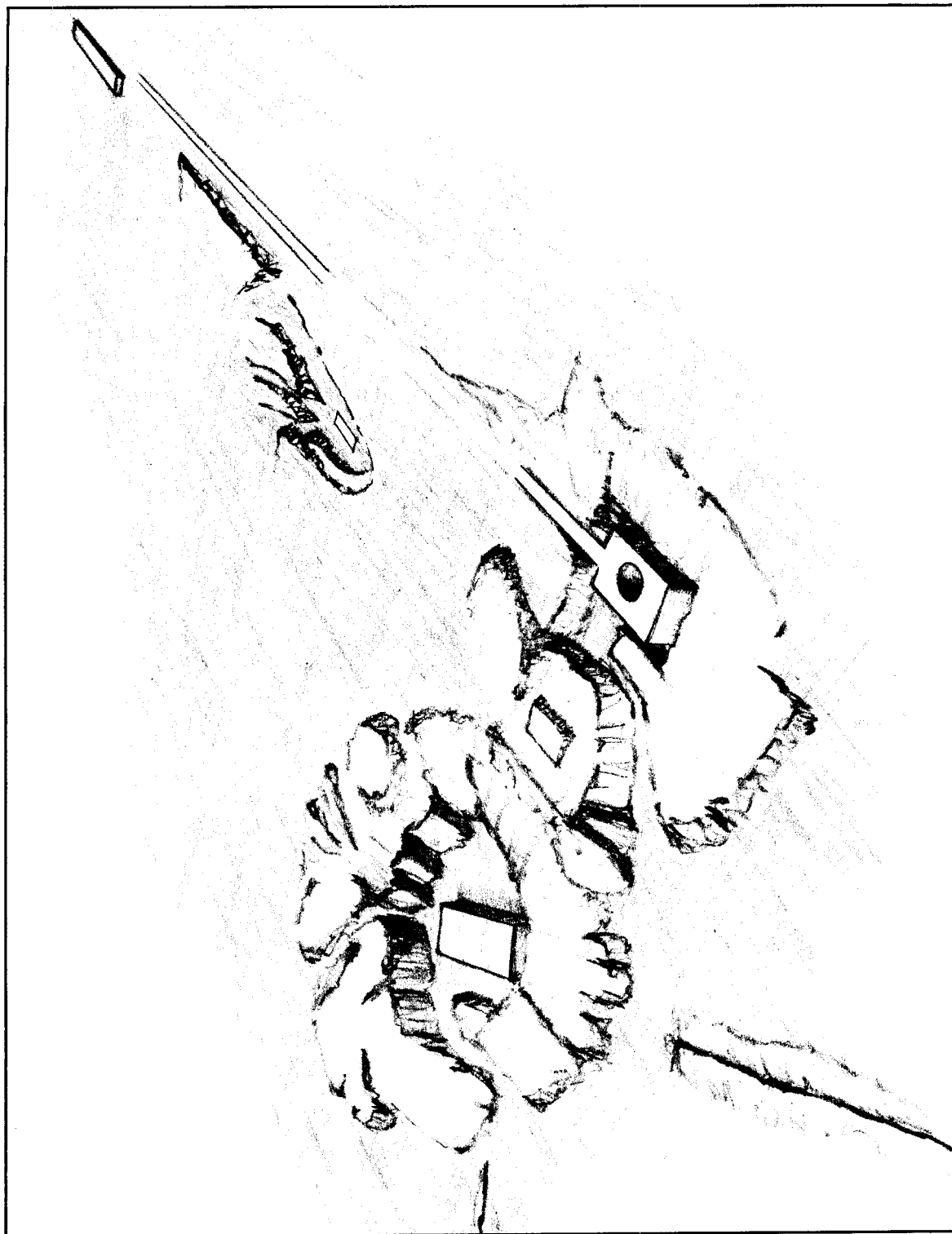


FIGURE 43. ARTIST'S CONCEPT OF LAUNCH COMPLEX (14), TYURATAM.

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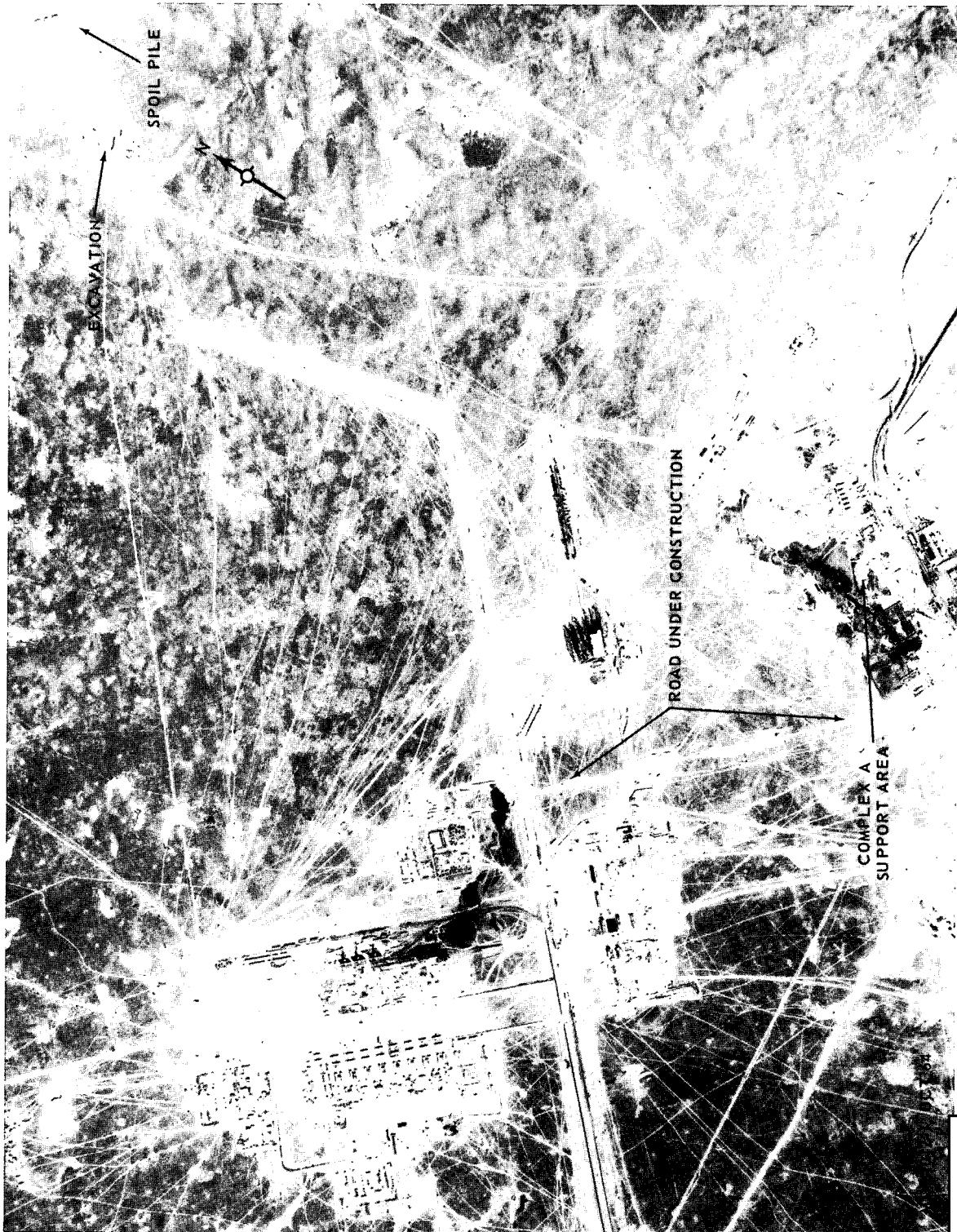


FIGURE 44. LAUNCH COMPLEX J, TYURATAM.

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FIGURE 45. LAUNCH COMPLEX K(13), TYURATAM.

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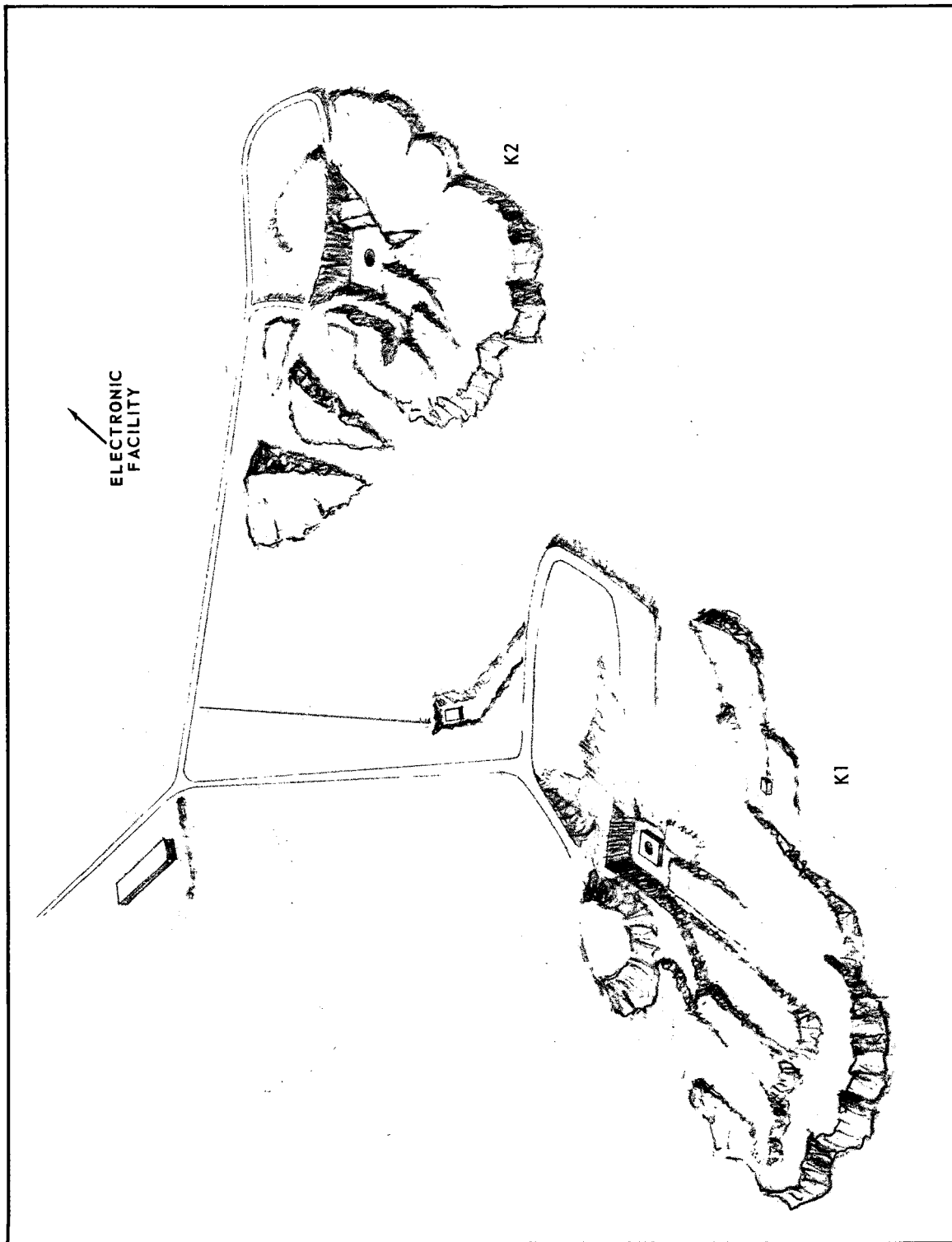


FIGURE 46. ARTIST'S CONCEPT OF LAUNCH COMPLEX K(13), TYURATAM.

KIPIC J-8053 (11/85)

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SOVIET IRBM/MRBM DEPLOYMENT

25X1

[redacted] photography since our 15th Revision covers 12 of the 15 IRBM, and 30 of the 69 MRBM complexes. One IRBM soft site has been abandoned and 2 IRBM hard sites, carried in our tables as under construction, have been inactive for a considerable period of time. We are dropping these 3 sites from our tables. See Figure 47 for locations of deployed IRBM/MRBM complexes. Typical configurations of the launch sites and the weapons system associated with each are depicted in Figure 48. The composition of IRBM/MRBM complexes is given in Table 6.

IRBM DEPLOYMENT

Current Force Level

The Soviet IRBM force currently consists of 33 sites containing a total of 114 launchers, including 54 in a hard configuration. Of these launchers, 111, including 51 silos, are estimated to be operational. These figures represent an overall reduction of 10 launchers (including 4 operational soft pads) from those carried in our 15th Revision. This reduction is explained in succeeding paragraphs.

Sites Without Support Facilities

25X1

[redacted] revealed that the soft IRBM launch site at Bayram-Ali has been rendered inoperative (Figure 49). In retrospect, initial evidence that the site was being dismantled was apparent as early as [redacted] when 3 buildings, including 2 barracks-type, were no longer visible. The latest coverage shows that the 4 missile-ready buildings, one control bunker, [redacted] and other structures have been destroyed or dismantled. A bulldozer apparently has been utilized extensively in destruction of the site and certain of its facilities.

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X1

The Bayram-Ali site was 1 of 9 singly deployed soft sites, all constructed [redacted] which are unique in that they lack the usual administration and support facilities. In addition to Bayram-Ali, this group includes IRBM sites at Ramoye, Traktovyy and Zhuravka; and MRBM launch facilities at Kraskino, Marina Gorka, Rozhdestvenka, Sledyuki, and Uzhgorod. We have been carrying these sites as operational, although we do not know their function or how they fit into the deployment program.

25X1

In light of the destruction of the Bayram-Ali launch site, we have examined available photography of the other 8 sites in this unique category. Recent coverage of 6 of the sites, including the 5 MRBM launch facilities, is either lacking or of poor quality and we cannot determine their current status. At 2 of the IRBM sites, however, dismantling operations may be underway. At Traktovyy, 2 barracks-type buildings identifiable on [redacted] are no longer visible on [redacted] (Figure 50). At Zhuravka, 1 of the 2 barracks-type buildings visible on [redacted] appears to be absent on [redacted] (Figure 51). Pending further coverage, we are continuing to carry the Traktovyy and Zhuravka sites as operational

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Inactive Hard Sites

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As early as our 12th Revision, [redacted] we pointed out that construction activity at a number of hard sites, 9 IRBM and 2 MRBM, was not progressing normally. Since that time both MRBM sites and 5 of the IRBM sites have been completed. In addition, we dropped the Bolshaya Kamenka IRBM site at Saratov (see 15th Revision), since photographic coverage indicates that it has been inactive for a considerable period of time.

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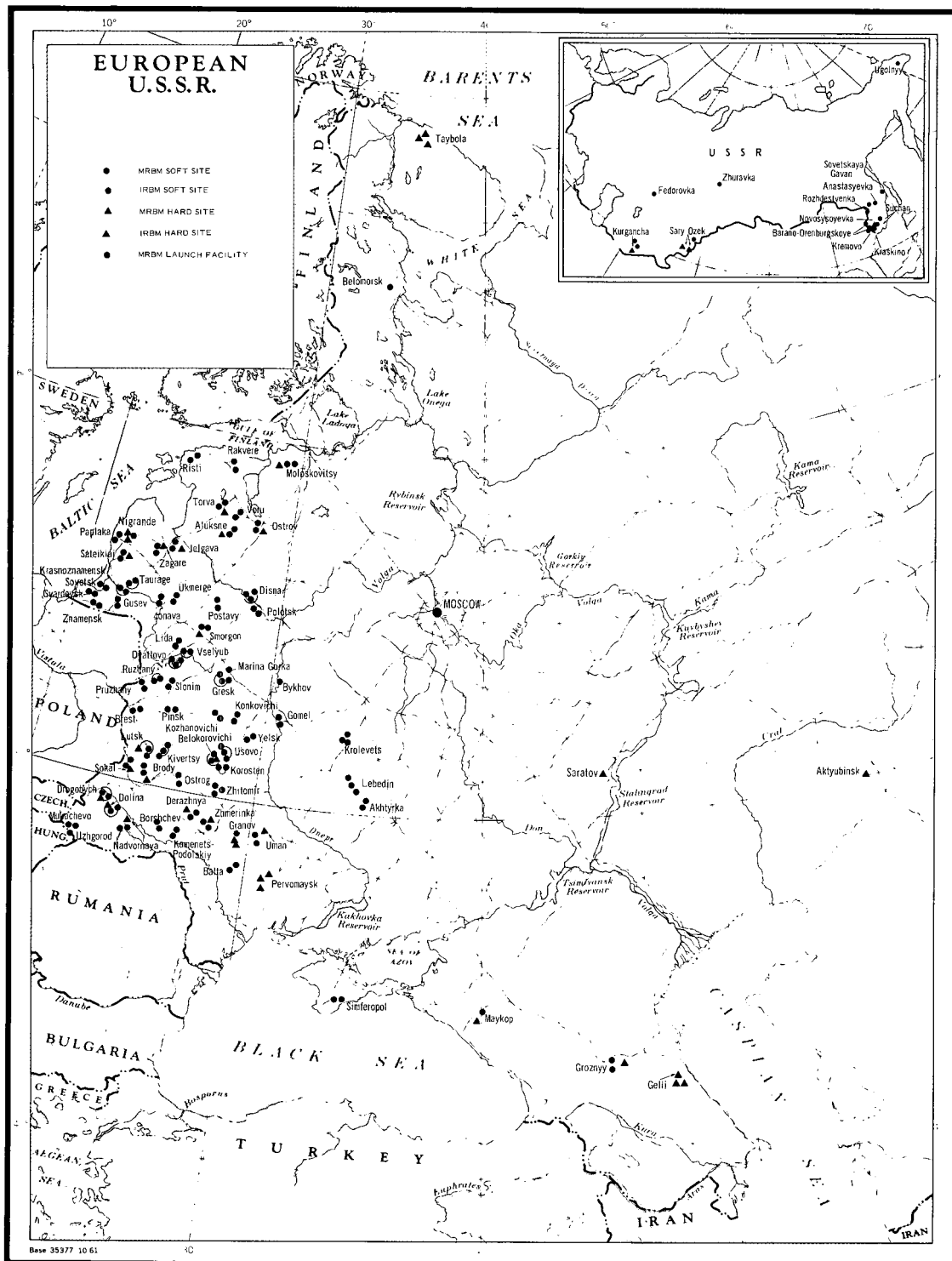


FIGURE 47. DEPLOYMENT OF SOVIET IRBM/MRBM COMPLEXES.

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Since our last revision we have re-examined available photography of the 3 remaining IRBM hard sites which have not been completed -- Karakhobda (Aktyubinsk Complex), Novosysoyevka 3, and Taybola 3.

The Karakhobda site was first observed in an early stage of construction on [REDACTED]

[REDACTED] that no construction progress occurred during a period of at least 9 months (Figure 52). Latest photographic coverage of this site on [REDACTED] though not of good quality, fails to reveal any activity or evidence of construction progress. Accordingly, we are placing this site on the inactive list and dropping it from our tables.

Novosysoyevka 3 has also been inactive for a considerable period of time, and is dropped from our tables. This site was in an early construction stage when first observed

[REDACTED] (Figure 53).

Recent photographic coverage of Taybola 3 is of poor quality and we are unable to determine its current status. We suspect that it is inactive also, but will continue to carry it in our tables until better photography is available. This site was first observed in an early stage

[REDACTED] shows that some progress has been made, though very little considering the year's interval between missions (Figure 54).

Saratov Complex

In our 15th revision we dropped the

Bolshaya Kamenka IRBM hard site at Saratov because of lack of construction activity. This judgment was confirmed by subsequent coverage

[REDACTED] However, we are watching with interest a suspect area located approximately 5.5 nm southwest of the inactive site (Figure 55). Here a rail spur branching north from the main Ryazano-Uralskaya rail line at Tatishchevo terminates in a wooded area. Two small rail spurs and 2 unidentified structures are newly identified at the rail line terminus on [REDACTED]

[REDACTED] This construction has been accomplished since [REDACTED]

MRBM DEPLOYMENT Current Deployment

The Soviet MRBM force currently consists of 158 sites containing 632 launchers, including 84 in a hard configuration. All are operational. No new developments at permanent MRBM launch facilities have been observed since our last revision.

Fixed Field Sites

Five fixed field sites have been identified on [REDACTED] photography since the 15th Revision, bringing the total identified to date to 71. A list of these sites is given in Table 5.

[REDACTED] revealed a 4-position field site at Zamshany near the Brest MRBM Complex (Figure 56). The site is 1.5 nm from the nearest permanent launch facility, and can be negated on [REDACTED]

[REDACTED] It was first visible on [REDACTED] This is the second fixed field site associated with the Brest Complex, which contains 2 permanent soft launch facilities.

At the Dolina MRBM Complex, the second new fixed field site was identified near Rukuv

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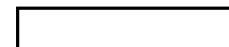
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This site contains 4 launch positions (Figure 57), and is located 5.5 nm from the nearest permanent soft site. No evidence of this fixed field launch point was visible on [redacted] in [redacted].

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The Dolina MRBM Complex contains 2 permanent soft sites and 1 hard launch facility.

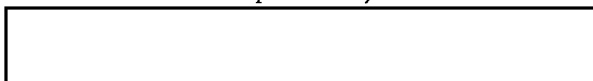
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The third new fixed field site was identified at Yemilchino on [redacted].

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[redacted] This site is located adjacent to an earlier identified site of the same category (Figure 58) and is the fourth fixed field site observed in the vicinity of the Korosten MRBM Complex, which contains 2 permanent soft sites. The new site contains 4 launch positions, and can first be

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The Yemilchino sites are located approximately 16 nm from the nearest permanent site at the Korosten Complex.

The fourth new fixed field site is located at Manzovka, about 11 nm from the Kremovo MRBM Complex. It is the first such facility associated with this complex, which contains 2 permanent soft sites. The fixed field site consists of 4 launch positions (Figure 59), can be

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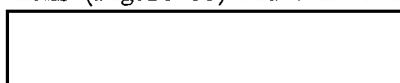
Continued examination of [redacted]

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[redacted] revealed the fifth new fixed field site at Kobylnik, approximately 16 nm from the nearest permanent soft site at the Postavy Complex. This complex contains 3 permanent sites, including 2 soft and 1 hard. The fixed field site contains clearings for 4 launch positions (Figure 60) and can be negated on [redacted].

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It is first visible [redacted]. This site is the

third fixed field facility identified in the vicinity of the Postavy Complex, which contains 3 permanent sites, including 2 soft and 1 hard.

Fixed field sites have now been identified at or near 43 of the 69 MRBM complexes. At 18 of these complexes, there is 1 fixed field site for each permanent soft launch facility. At 20 other complexes, there is 1 associated fixed field site per complex, although each contains either 2 or 3 permanent soft sites. At 4 complexes, fixed field facilities equal the total hard and soft permanent sites. At 1 complex, Korosten, there are 4 fixed field positions and only 2 permanent sites, both soft. At the 26 MRBM complexes where no fixed field sites have been identified, 20 contain soft sites only, and 6 have both hard and soft sites.

We are still unable to determine the function(s) of these fixed field launch facilities. Details of prior analysis of these sites are contained in our 13th, 14th and 15th Revisions.

MODE OF OPERATION, TYPE IV IRBM/MRBM SITES

We are continuing our analysis of IRBM/MRBM hard sites in an attempt to determine their mode of operation, i.e., whether the missile flies out of the silo or is elevated prior to launch.

Currently available evidence upon which to base a judgment is limited to [redacted] photography of a very few launch facilities. We have also considered the fact that both the SS-4 and SS-5 are inertially guided, and therefore more compatible with a fly-out system than would be the case if a ground-based radio guidance link was required.

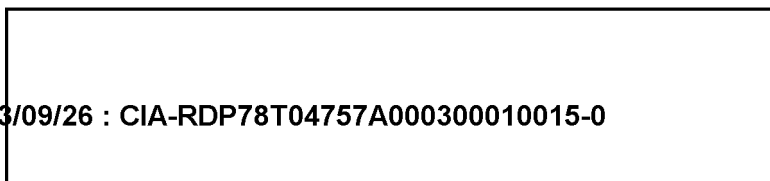
In evaluating IRBM hard sites, we utilized [redacted] photography of the Paraul site in the Gelli Complex ([redacted]); the

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Kalnik Site at the Granov Complex [] and Launch Site 4C2 at Kapustin Yar [] the prototype for field deployment. For MRBM hard sites, high-resolution photography of an open silo is limited to Launch Site 4C1 [] [] the rangehead prototype of sites deployed in the field. Photography used in the analysis is shown in Figure 61. Artist's concepts of all but the Paraul site are contained in our 13th Revision.

Analysis of the silo openings at Kalnik and the 2 Kapustin Yar sites indicates that as the silo opening approaches the surface it flares out in a funnel shape. At Kalnik, the silo opening increases in diameter from approximately [] feet at the throat to approximately [] at the lip. The depth of the flared portion of the silo cannot be determined from photography, but is at least 5 feet.

The net effect of the flange is almost certainly detrimental to the hardness of the sites, since it adds substantially to the diameter of the opening which must be covered by the silo door. (An additional 15 feet for IRBM sites, using Kalnik as an example.)

The flanged opening also would appear to mitigate against an elevator system, since loading and erection of the missile on the elevator would be considerably more difficult than would be the case if the surface diameter more closely approximated that of the opening at the throat of the funnel.

Examination of photography of the silo openings at Kalnik and the 2 Kapustin Yar prototype sites does not reveal any clue to the method utilized to vent exhaust gases if the missiles do fly out. On the Kalnik photography, however, a number of probable pre-fabricated steel rings

feet in diameter) are visible in the vicinity of a silo. Based on this, and photography of other launch sites, we believe that these rings are inserted into the silos to form the inner silo walls. The utilization of rings of several sizes suggests the possibility of a silo-within-a-silo configuration.

Photography of the Paraul site at Gelli, while in some respects not of as good quality as that of the other launch facilities analyzed, appears to offer the best vertical view of a completed silo. A plan view (top) of a completed Type IV silo at the Paraul IRBM Launch Site is shown in Figure 62. It shows the surface aperture to be about [] in diameter. Within the aperture, and at a lower level, there is an inner casing with an inside diameter of approximately [] and a wall thickness of approximately 5 feet. A probable separation of approximately [] exists between the outside circumference of the inner casing and the outside silo wall. This probable separation appears on the photograph as a dark band along the entire outside circumference of the inner casing. We believe it possible that this circular outer ring could represent a vent to permit the escape of exhaust gases during a fly-out launch.

The sum of the evidence, while not conclusive, indicates a good possibility that both IRBM and MRBM hard sites are configured to employ a fly-out mode of operation. If so, a postulated configuration for IRBM hard sites, based on the sum of the evidence, can be depicted as illustrated in Figure 63. The MRBM configuration would be similar, except for somewhat smaller silo dimensions.

KAPUSTIN YAR MISSILE TEST CENTER

Test Range Facilities

Coverage of the Kapustin Yar Missile Test Center since our last revision has been sparse.

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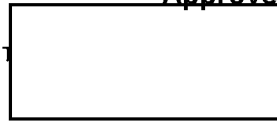
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25X1 Portions of Launch Areas 2C, 3C, 4C, and 5C can be seen through the clouds on [redacted]

25X1 [redacted] Exercises can be observed on the southern pad at Launch Area 2C, and at Launch Site 5C1. Cloud cover and poor image quality preclude a further readout of these exercises.

25X1 [redacted] provided interpretable coverage only of Launch Area 1C. The 2 new rail-served pads are now complete and an exercise is underway at the northwestern-most launch pad (Figure 64). A possible missile is erected in the center of the pad and at least 6 vehicles/pieces of equipment are positioned in the vicinity.

Test Range Activity

Flight test operations at Kapustin Yar were

relatively light during the period [redacted] [redacted] with the majority of the firings of the KY-2 and KY-3 type.

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[redacted] a cruise missile, an SS-4, a KY-2, and a possible SS-3 were fired in that order over an 8.5-hour time span, probably as part of a demonstration. In addition to these 4 launches, 2 operations of undetermined results were also conducted.

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An SS-4 firing to the 1,100-nm impact area was detected on [redacted] and an SS-5 was launched to full range on [redacted]

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Probable KY-2 missiles were fired on [redacted]

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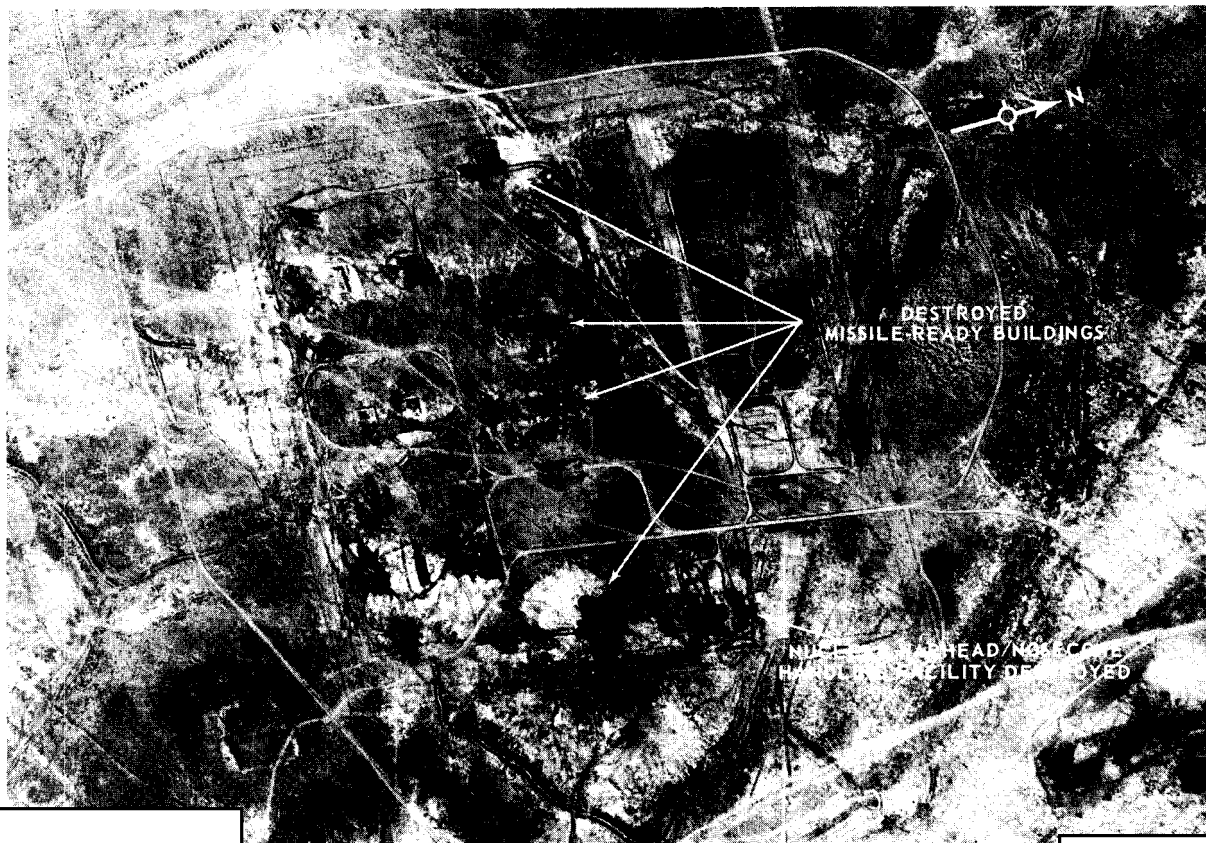


FIGURE 49. DESTROYED IRBM LAUNCH SITE, BAYRAM-ALI.

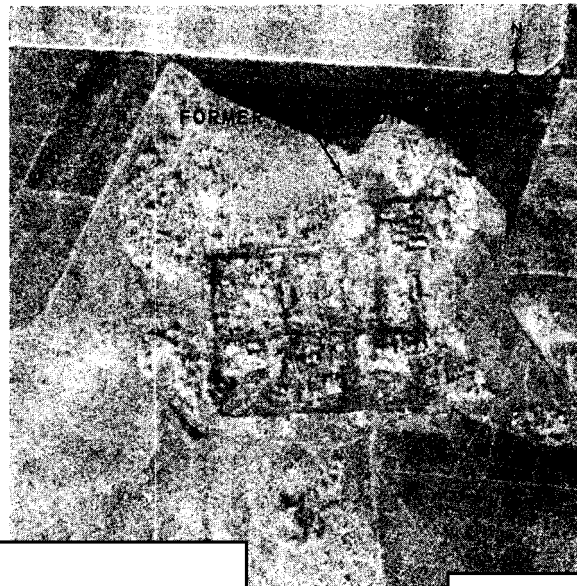


FIGURE 50. DISMANTLING OF BARRACKS-TYPE BUILDINGS, TRAKTOYYY IRBM LAUNCH SITE.

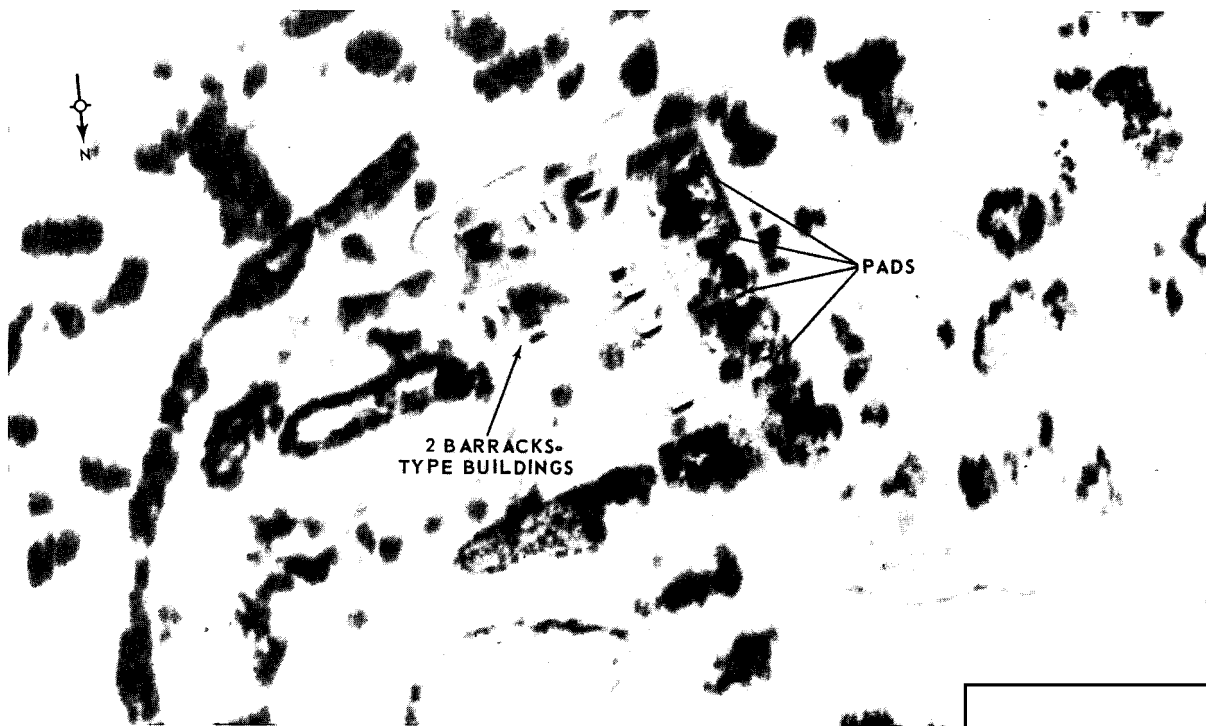
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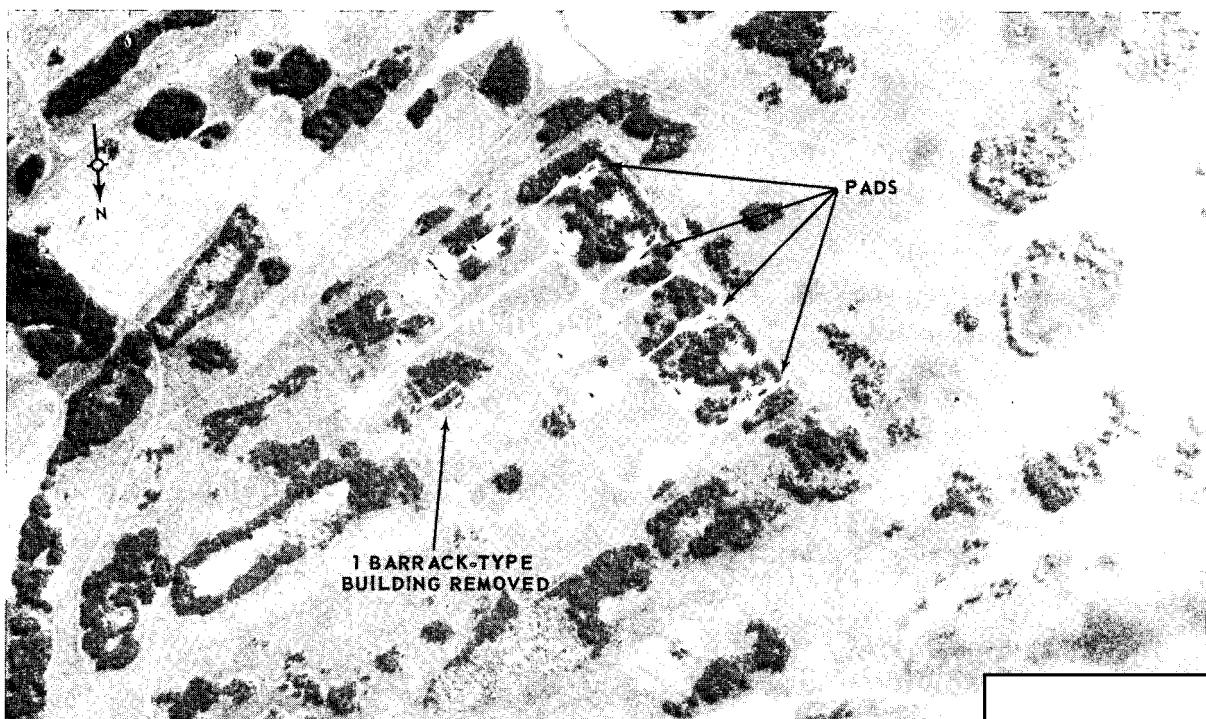
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FIGURE 51. DISMANTLING OF BARRACKS-TYPE BUILDINGS, ZHURAVKA IRBM LAUNCH SITE.

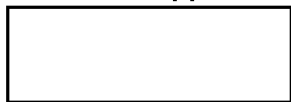
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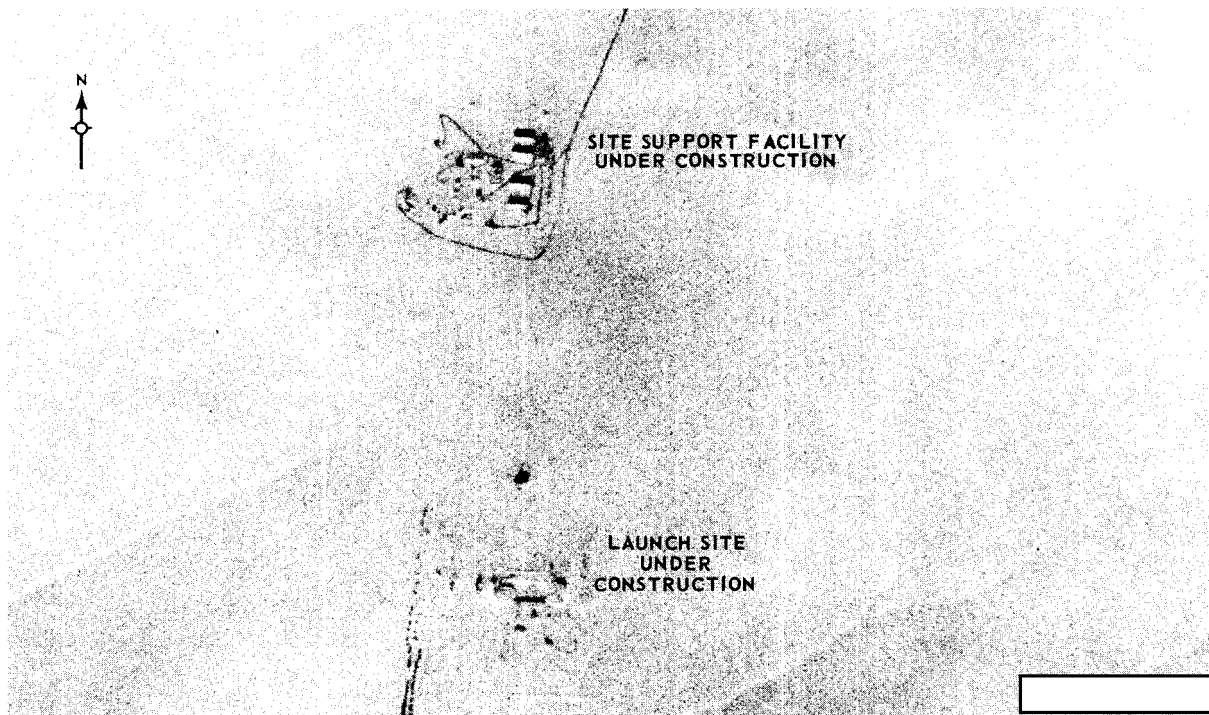
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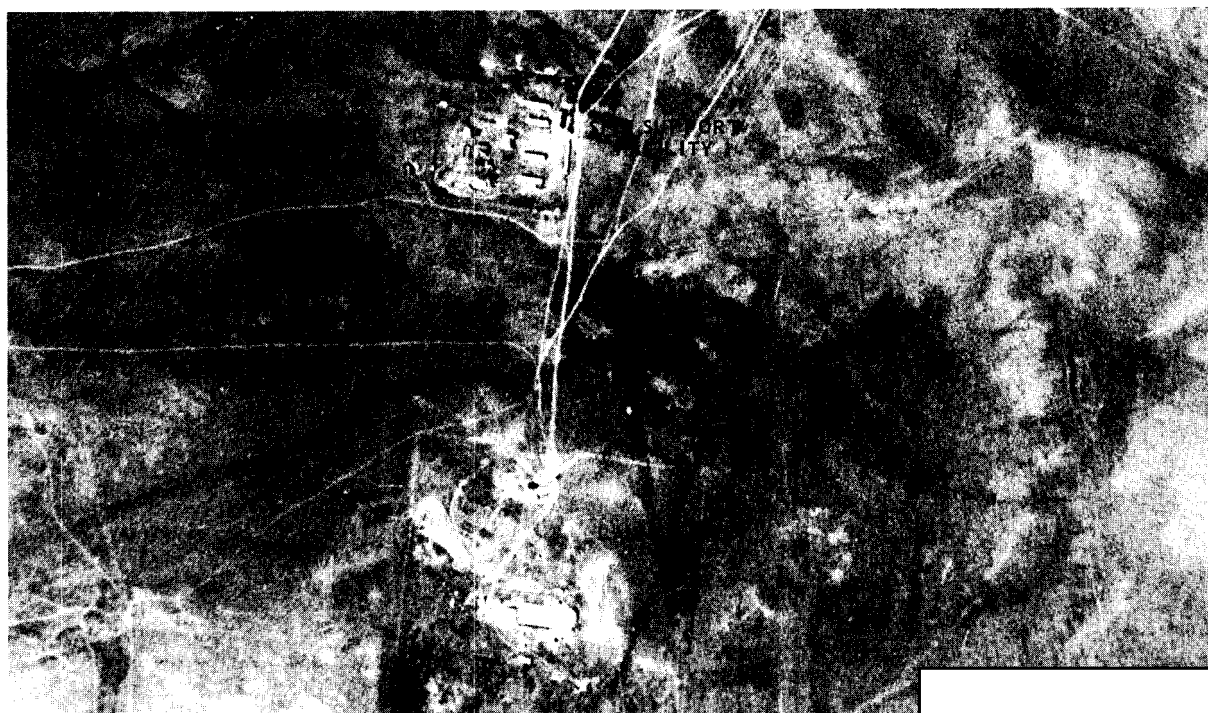
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FIGURE 52. KARAKHOBDA IRBM LAUNCH SITE.

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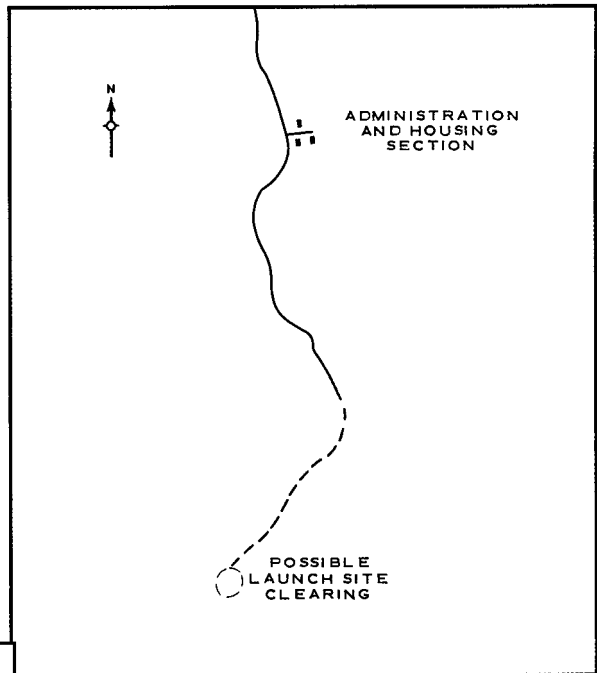
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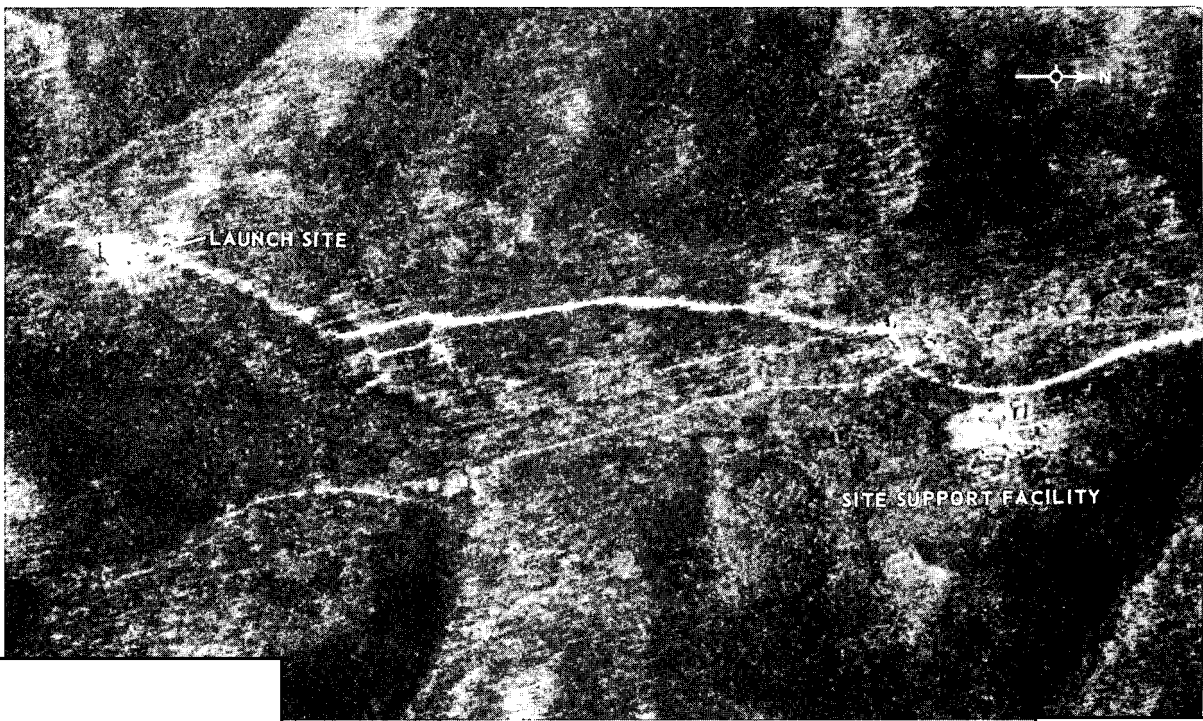
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FIGURE 53. ABANDONED NOVOSYSOYEVKA 3 IRBM LAUNCH SITE.

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TOP SECRET

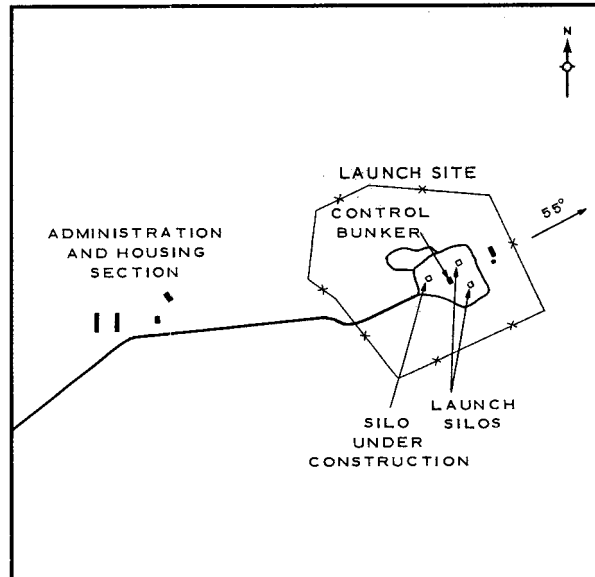
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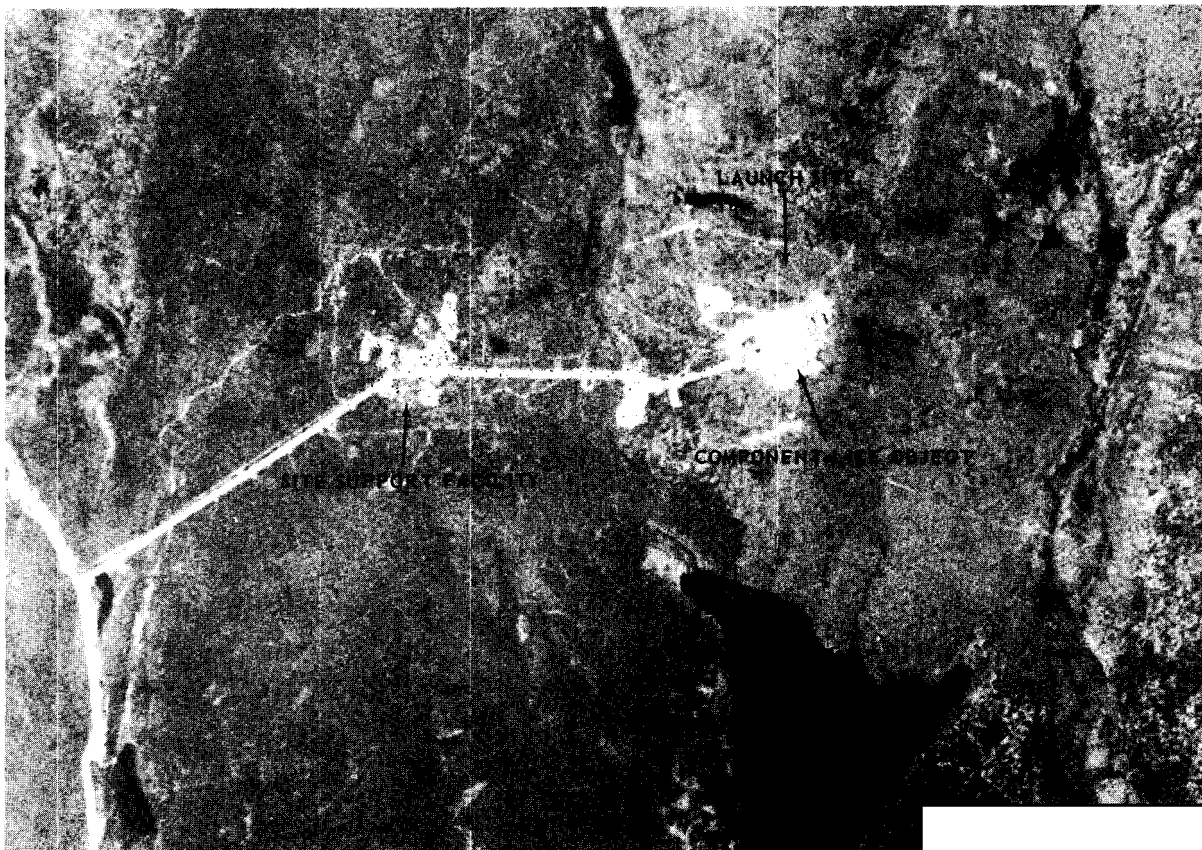
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FIGURE 54. TAYBOLA 3 IRBM LAUNCH SITE.

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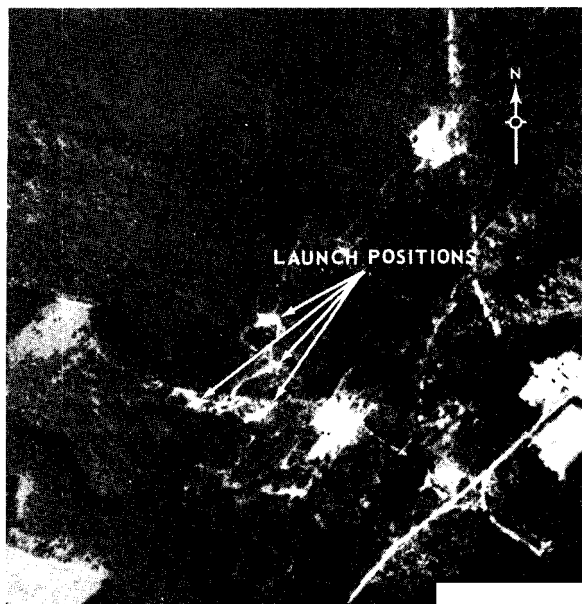


FIGURE 56. ZAMSHANY FIXED FIELD SITE, BREST MRBM COMPLEX.

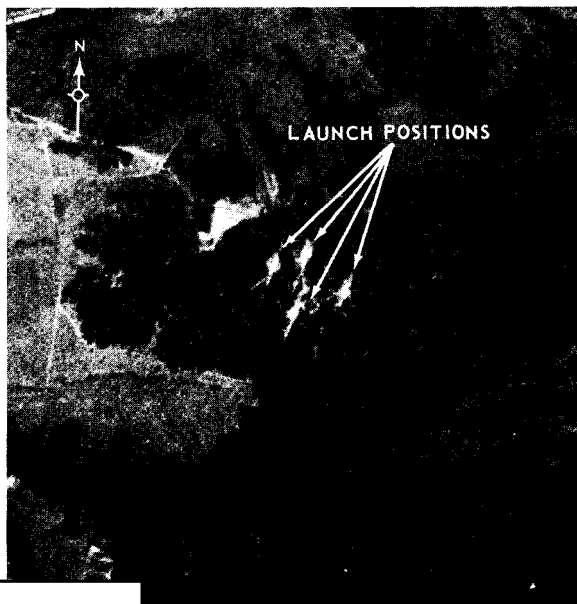


FIGURE 57. RUKUV FIXED FIELD SITE, DOLINA MRBM COMPLEX.

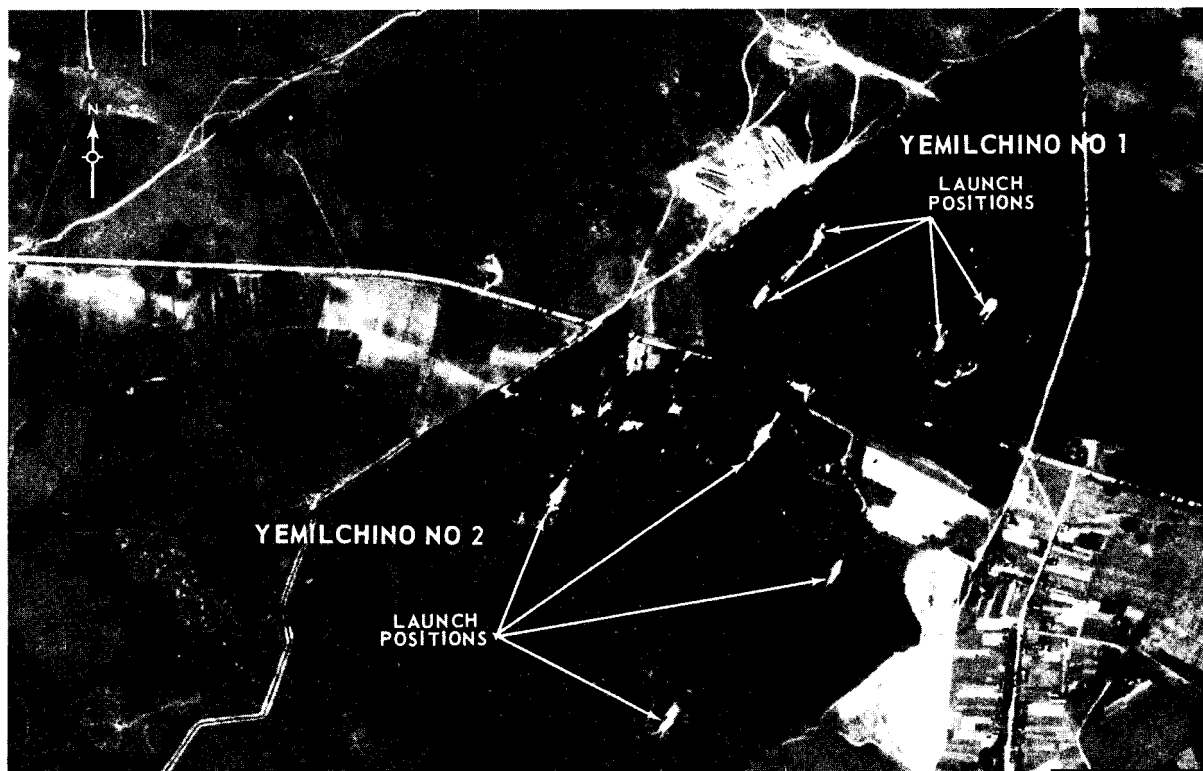


FIGURE 58. YEMILCHINO 1 AND YEMILCHINO 2 FIXED FIELD SITES, KOROSTEN MRBM COMPLEX.

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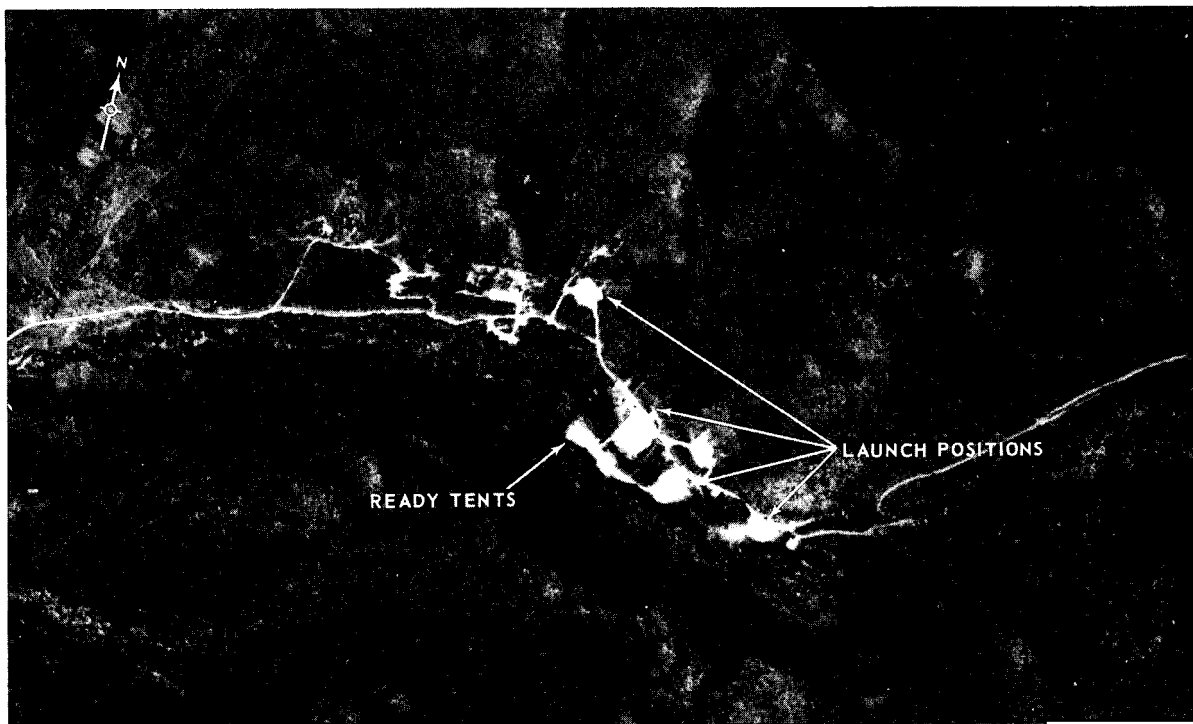


FIGURE 59. MANZOVKA FIXED FIELD SITE, KREMOVO MRBM COMPLEX.

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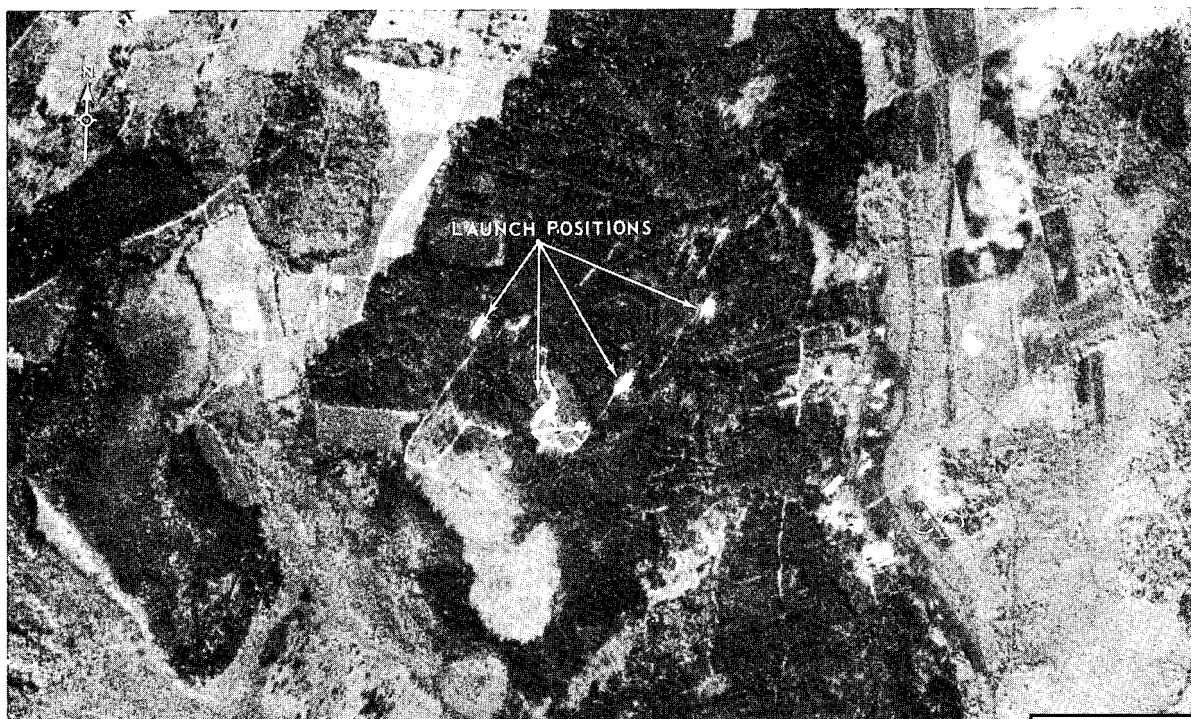


FIGURE 60. KOBYLNIK FIXED FIELD SITE, POSTAVY MRBM COMPLEX.

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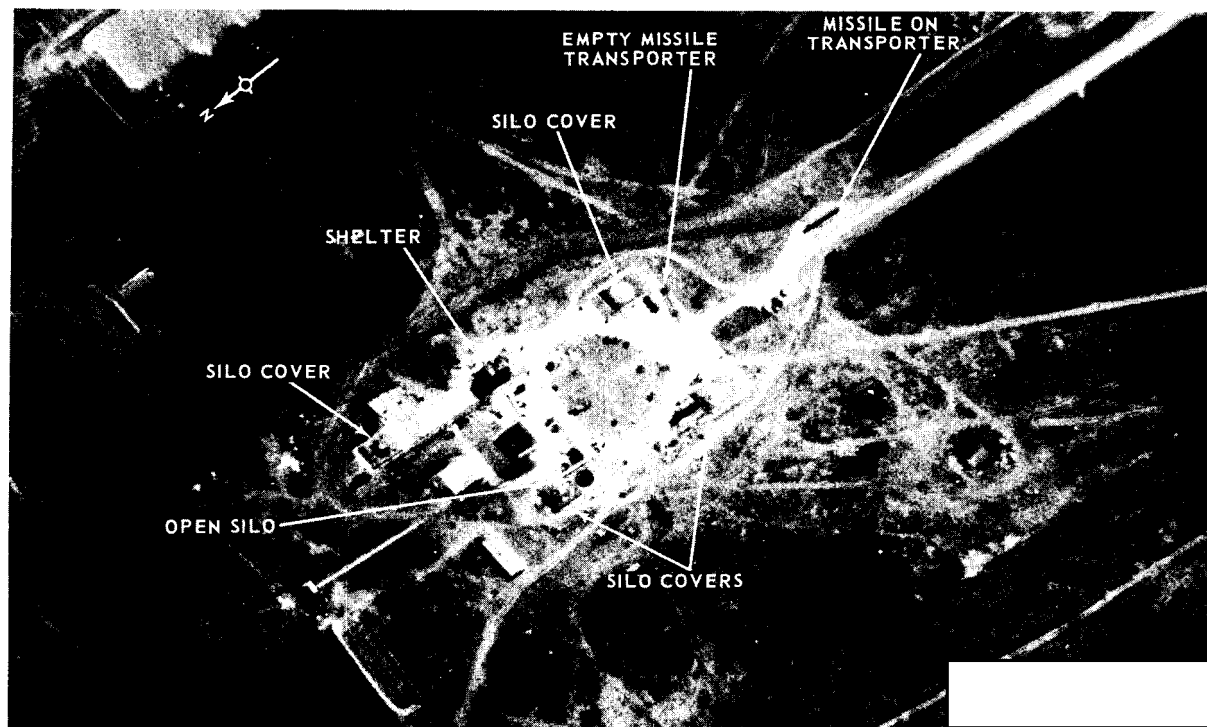
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FIGURE 61. TYPE IV

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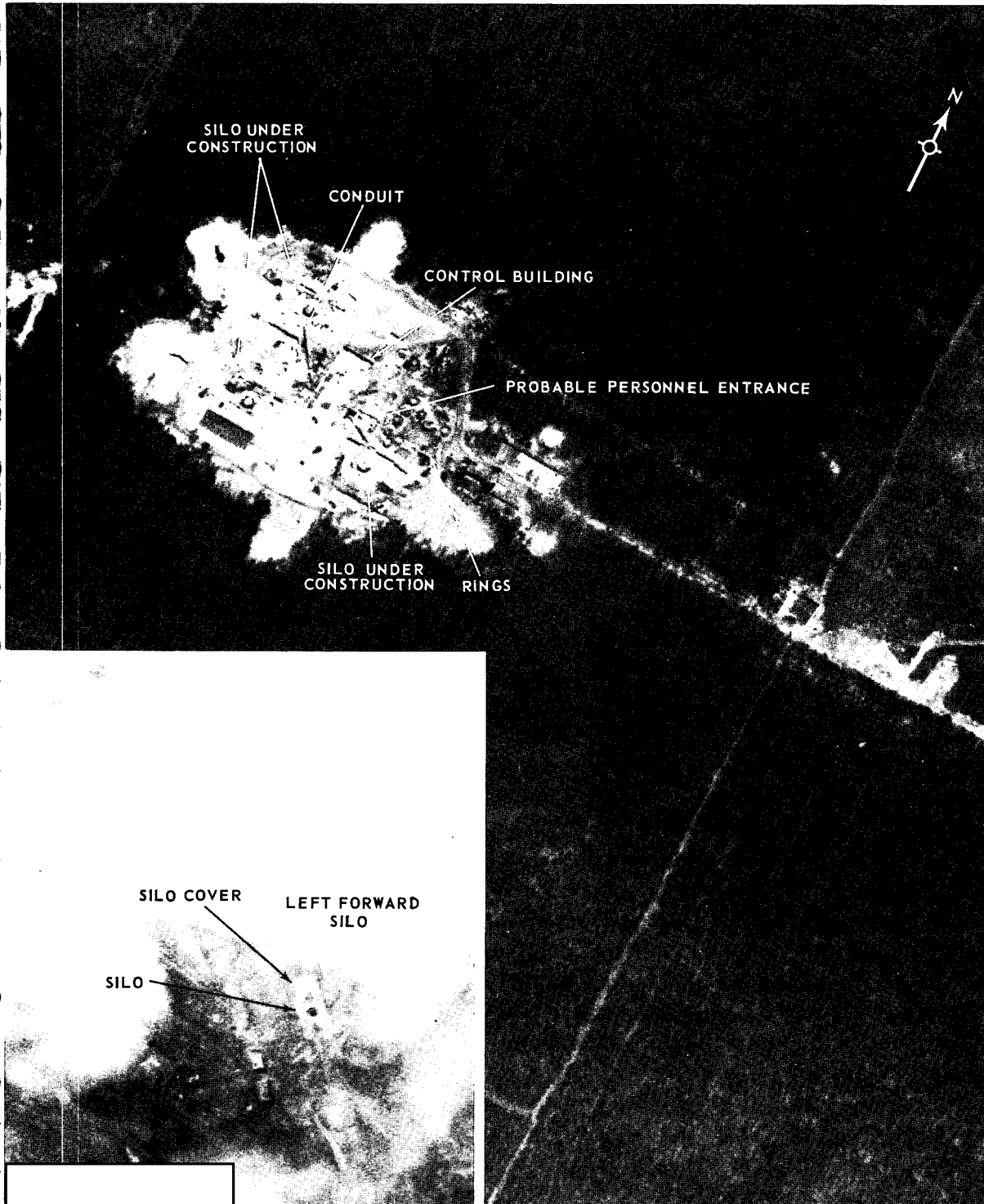
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IRBM/MRBM LAUNCH SITES.

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TOP SECRET

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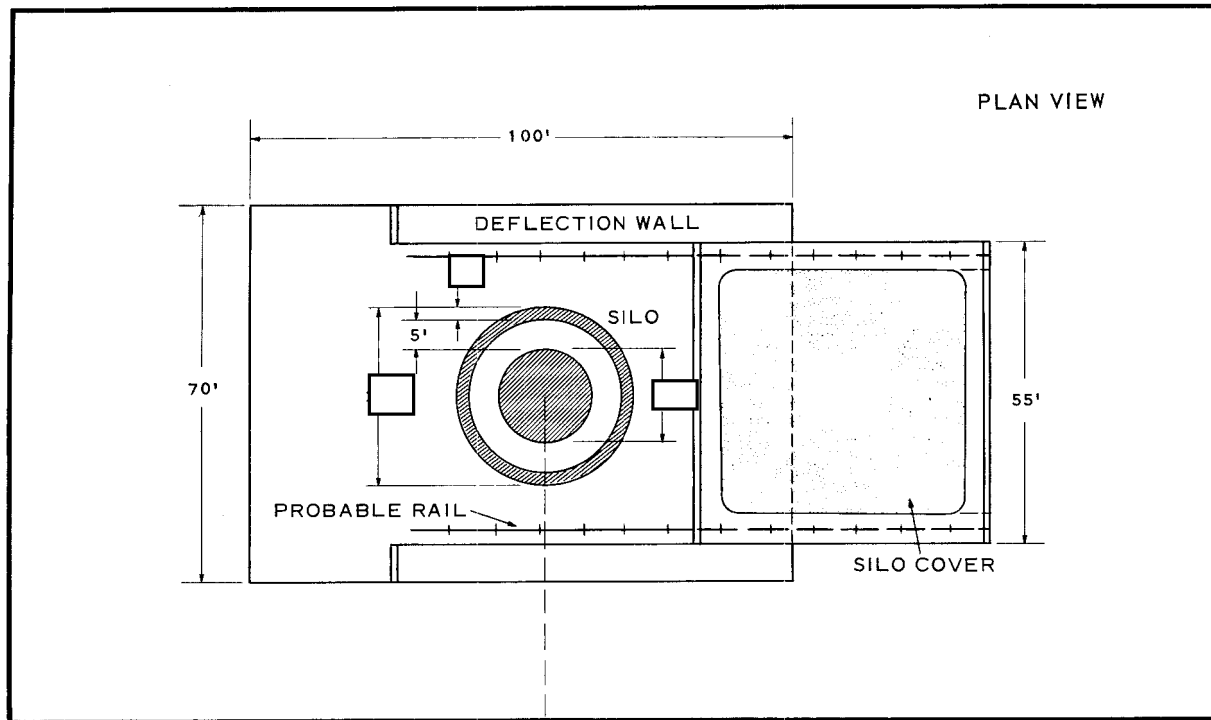


FIGURE 62. PLAN VIEW (TOP) OF TYPE IV LAUNCH SILO, PARaul IRBM LAUNCH SITE.

NPIC J-8069 (1/65)

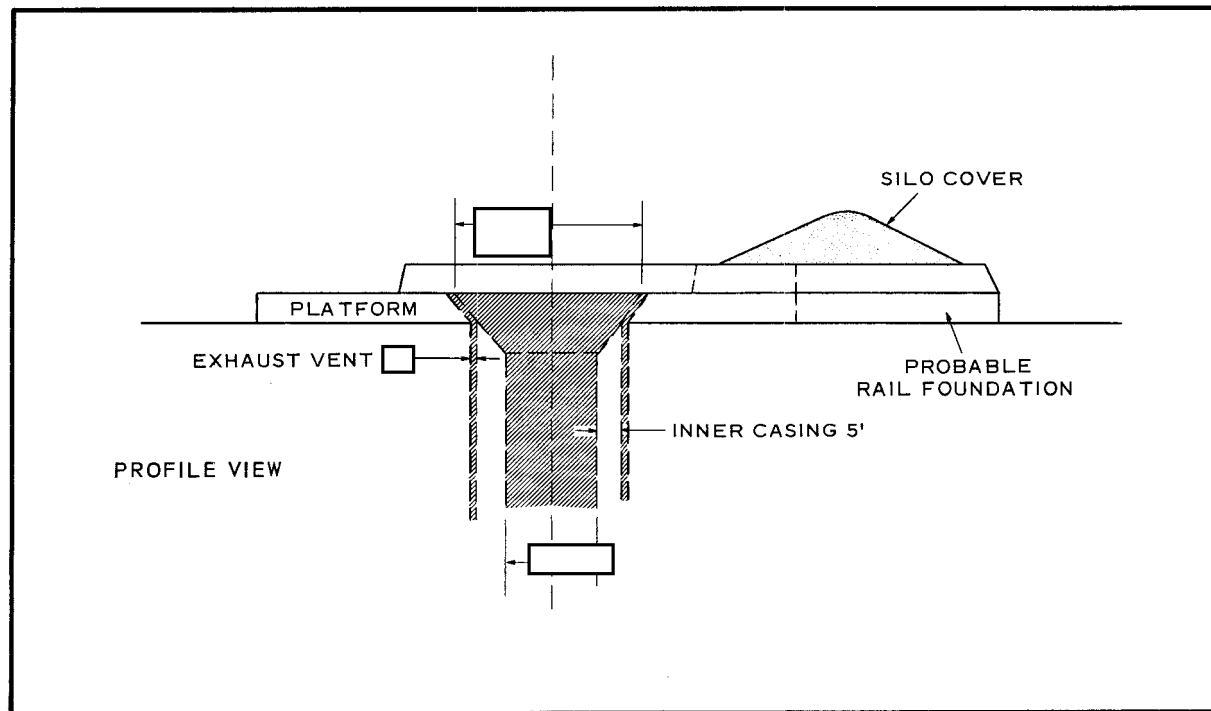


FIGURE 63. PLAN VIEW (SIDE) OF POSTULATED TYPE IV IRBM LAUNCH SILO.

NPIC J-8070 (1/65)

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TOP SECRET

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TOP SECRET
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25X1

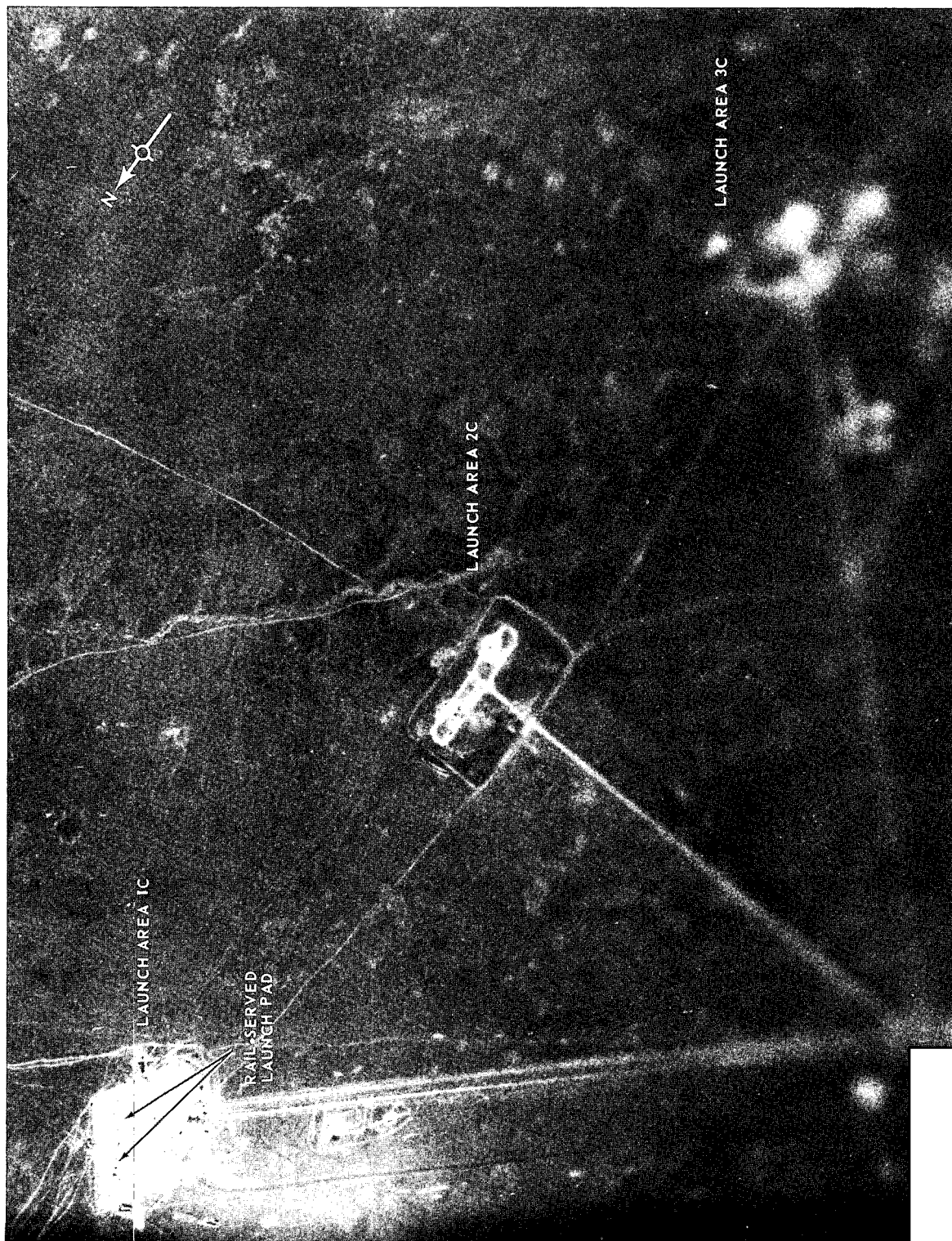


FIGURE 64. LAUNCH AREA 1C, KAPUSTIN YAR.

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TABLE 1. SUMMARY OF ESTIMATED STATUS OF IDENTIFIED ICBM, IRBM, AND MRBM LAUNCHERS
AT DEPLOYED COMPLEXES*

Type	Sites	Launchers	Operational	U/C	Type	Sites	Launchers	Operational	U/C
ICBM					IRBM				
IA	3	4	4	0	III	15	60	60	0
IB	2	4	0	4	IV	18	54	51	3
IIA	5	10	10	0	TOTAL	33	114	111	3
IIB	29	58	58	0	MRBM				
IIC	7	14	14	0	I	84	336	336	0
IID	30	60	60	0	II	53	212	212	0
IIIA	24	72	60	12	IV	21	84	84	0
IIIB	3	9	9	0	TOTAL	158	632	632	0
III (Single)	31	40	0	40	GRAND				
TOTAL	134	271	215	56	TOTAL	191	746	743	3

*See Tables 2, 3, and 4 for details. Figures include 3 launch silos at Type IIIA and IIIB ICBM and Type IV IRBM sites, and 4 launch silos at Type IV MRBM sites.

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TABLE 2. SUMMARY EVALUATION OF SOVIET ICBM DEPLOYMENT

Location*	BE Number	Coordinates	Type of Site	Number of Launchers		Site Negotiated		First Coverage		Latest Coverage		Stage of Const on Last Usable Coverage			Estimated Quarter Site Operational				Estimated Status
				Soft	Hard	Date	M-n	Date	M-n	Date	M-n	Date	M-n	Const	1st	2nd	3rd	4th	
ALEYSK																			
Site A(1)		52-27N 82-35E	III (Single)	1											65				U/C
Site B(2)		52-29N 82-40E	III (Single)	1												65			U/C
Site C(3)		52-33N 82-42E	III (Single)	1												65			U/C
Site D(4)		52-32N 82-34E	III (Single)	1												65			U/C
Site E(5)		52-35N 82-30E	III (Single)	1												65			U/C
Site F(6)		52-36N 82-36E	III (Single)	1													65		U/C
DOMBAROVSKIY																			
Site A(4)		51-11N 59-37E	III (Single)	1													65		U/C
Site B(3)		51-06N 59-38E	III (Single)	1													65		U/C
Site C(2)		51-01N 59-41E	III (Single)	1													65		U/C
Site D(1)		50-58N 59-32E	III (Single)	1													65		U/C
Site E(6)		51-04N 59-28E	III (Single)	1														65	U/C
DROVYANAYA																			
Site A (1)		51-25N 112-00E	IIB	2											63				Operational
Site B (2)		51-25N 112-04E	IIIA	2	3										64				Operational
Site C (4)		51-28N 112-04E	IID	2														63	Operational
Site D (3)		51-20N 112-01E	IID	2											64				Operational
Site E (5)		51-23N 112-50E	IIIA	3														64	Operational
Site F (6)		51-20N 112-55E	IIIA	3														64	Operational
GLADKAYA																			
Site A (3)		56-20N 92-18E	IID	2														63	Operational
Site B (2)		56-25N 92-27E	IID	2											64				Operational
Site D (5)		56-20N 92-13E	IIIA	3											65				U/C
IMENI GASTELLO																			
Site A (1)		51-03N 66-06E	III(Single)	1													65		U/C
Site B (2)		51-06N 66-02E	III (Single)	1													65		U/C
Site C (3)		51-10N 66-06E	III (Single)	1													65		U/C
Site D (4)		51-07N 66-13E	III (Single)	1													65		U/C
Site E (5)		51-13N 66-13E	III (Single)	1													65		U/C
Site F (6)		51-13N 66-05E	III (Single)	1														65	U/C
ITATKA																			
Site A (1)		56-59N 85-32E	IIB	2													62		Operational
Site B (2)		57-01N 85-39E	IIB	2											63				Operational
Site C (3)		56-54N 85-39E	IID	2														63	Operational
KARTALY																			
Site A (1) Probable		53-01N 60-26E	III (Single)	1													65*		U/C
Site B (2)		52-56N 60-31E	III (Single)	1													65		U/C
Site C Possible		52-55N 60-24E	III (Single)																
KOSTROMA																			
Site A (1)		58-02N 41-22E	IIB	2													62		Operational
Site B (2)		58-02N 41-07E	IIB	2													62		Operational
Site C (3)		57-59N 41-09E	IIB	2														62	Operational
Site D (4)		58-05N 41-10E	IIB	2															Operational
Site E (5)		57-38N 41-14E	IIIA	3											63			63	Operational
Site F (6)		57-55N 41-10E	IID	2														63	Operational
Site G (7)		58-06N 41-32E	IID	2											64				Operational
Site H (8)		58-04N 41-34E	IIIA	3														65	Undetermined
KOZELEK																			
Site A (3)		53-54N 35-15E	IIC	2														63	Operational
Site B (2)		53-48N 35-47E	IIC	2														63	Operational
Site D (4)		53-54N 35-51E	IIC	2														63	Operational
Site E (5)		53-31N 35-41E	IIB	3														64	Operational
Site F (6)		53-41N 35-39E	IIB	3														64	Operational

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TABLE 2. (Continued)

Location*	BE Number	Coordinates	Type of Site	Number of Launchers		Site Negated		First Coverage		Latest Coverage		Stage of Const on Last Usable Coverage			Estimated Quarter Site Operational				Estimated Status
				Soft	Hard	Date	Msn	Date	Msn	Date	Msn	Date	Msn	Const	1st	2nd	3rd	4th	
NOVOSIBIRSK																			
Site A (2)		55-19N 83-10E	IIIB	2											63				Operational
Site B (1)		55-19N 83-02E	IIIA		3											63			Operational
Site C (3)		55-23N 82-54E	IIIA														64		Operational
Site D (1)		55-22N 83-14E	IID	2														63	Operational
Site E (5)		55-20N 82-36E	IID	2											64				Operational
OLYANNAYA																			
Site A (1)		50-54N 115-48E	IIIA		3										64				Operational
Site B (2)		50-55N 115-45E	IIIA		3										65				U/C
Site C (3)		51-01N 113-58E	IIIA		3										63				U/C
Group D (4-10)		51-04N 116-06E	III (Single)		10 1'													63	U/C
OMSK																			
Site A (1)		55-09N 73-38E	IIIB		3										64				Operational
PERM																			
Site A (1)		57-41N 56-11E	IIIB	2												62			Operational
Site B (2)		57-44N 55-55E	IIIB	2															Operational
Site C (3)		57-38N 56-07E	IIIB	2													63		Operational
Site D (5)		57-42N 55-47E	IID	2														63	Operational
Site E (6)		57-45N 56-00E	IID	2											64				Operational
Site F (4)		57-41N 56-04E	IIIA		3													64	Operational
PLESETSK																			
Site 1 (1)		62-56N 40-27E	IA	2											60				Operational
Site 2 (2)		62-56N 40-32E	IA	1											60				Operational
Site 3 (3)		62-58N 40-41E	IA	1												60			Operational
Site A (4)		62-59N 40-47E	IIA	2														61	Operational
Site B (5)		63-03N 40-57E	IIIB	2												62			Operational
Site C (6)		63-01N 40-53E	IIIA		3										63				Operational
Site D (8)		62-54N 40-47E	IIC	2													63		Operational
Site E (7)		62-51N 40-35E	IIC	2														63	Operational
Site F 2'		62-52N 40-44E																	
Site G (9) Probable		62-53N 40-51E	IB	2														65	U/C
Site H (10) Probable		62-53N 40-52E	IB	2														65	U/C
SHADRINSK																			
Site A (1)		56-09N 63-51E	IIIA		3													63	Operational
Site B (2)		56-10N 64-02E	IIIA		3										64				Operational
Site C (3)		56-07N 63-57E	IIIA		3													64	Operational
SVOBODNY																			
Site A (3)		51-55N 128-10E	IIIB	2														62	Operational
Site B (1)		51-49N 128-19E	IIIB	2														62	Operational
Site C (2)		51-53N 128-25E	IIIB	2															Operational
Site D (4)		51-58N 128-07E	IID	2											64				Operational
Site E (6)		51-43N 128-00E	IID	2														63	Operational
Site F (6)		51-52N 128-13E	IID	2														63	Operational
Site G (7)		51-38N 127-58E	IIIA		3										64				Operational
Site H (8)		52-03N 128-06E	IID	2														64	Operational
TEYKOVO																			
Site A (1)		56-55N 40-27E	IIIB	2												62			Operational
Site B (2)		56-56N 40-33E	IIIB	2												62			Operational
Site C (3)		56-55N 40-17E	IIIB	2											63				Operational
Site D (4)		56-59N 40-40E	IID	2														63	Operational
Site E (5)		56-49N 40-10E	IID	2														63	Operational
Site F (6)		56-55N 40-22E	IID	2												64			Operational
TYUMEN																			
Site A (3)		56-52N 65-34E	IIC	2														63	Operational
Site C (2)		56-51N 65-27E	IIC	2														63	Operational

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TABLE 2. (Continued)

Location*	BE Number	Coordinates	Type of Site	Number of Launchers		Site Negated		First Coverage		Latest Coverage		Stage of Const on Last Usable Coverage			Estimated Quarter Site Operational				Estimated Status	
				Soft	Hard	Date	Msn	Date	Msn	Date	Msn	Date	Msn	Const	1st	2nd	3rd	4th		
UZHUR		55-20N 66-43E	III (Single)	1													65		U/C	
Site B (2)		55-18N 89-38E	III (Single)	1													65		U/C	
Site C (3)		55-20N 89-33E	III (Single)	1														65	U/C	
Site D (4)		55-17N 89-26E	III (Single)	1														65	U/C	
Site E (5)		55-13N 89-33E	III (Single)	1														65	U/C	
Site F (6)		55-25N 89-39E	III (Single)	1														65	U/C	
VERKHNYAYA SALDA																				
Site A (2)		58-09N 60-16E	IIB	2												62				Operational
Site B (1)		58-06N 60-21E	IIA	2															61	Operational
Site C (3)		58-10N 60-28E	IIA	2															61	Operational
Site D (4)		58-12N 60-34E	IIB	2												62				Operational
Site E (5)		58-14N 60-55E	IIB	2															62	Operational
Site F (7)		58-14N 60-41E	IIIA	3												63				Operational
Site G (8)		58-13N 60-49E	IIIA	3													63			Operational
Site H (9)		58-05N 60-13E	IID	2														63		Operational
Site I (10)		58-09N 60-32E	IID	2														63		Operational
YEDROVO																				
Site A (2)		57-48N 33-36E	IIB	2														62		Operational
Site B (1)		57-48N 33-14E	IIB	2															62	Operational
Site C (5)		57-49N 33-08E	IID	2												64				Operational
Site D (4)	57-48N 33-28E	IID	2														63		Operational	
Site E (6)	57-52N 33-15E	IIIA	3													63			Operational	
Site F (6)	57-44N 33-06E	IID	2														63		Operational	
Site G (7)	57-47N 33-02E	IID	2												64				Operational	
Site I (3)	57-52N 33-27E	IIIA	3															63	Operational	
YOSHKAR-OLA																				
Site A (1)	56-35N 48-09E	IIB	2													62			Operational	
Site B (2)	56-35N 48-18E	IIB	2														62		Operational	
Site C (3)	56-32N 48-27E	IIB	2												63				Operational	
Site D (4)	56-31N 48-20E	IID	2														63		Operational	
Site E (5)	56-34N 48-13E	IID	2															63	Operational	
Site F (6)	56-36N 48-28E	IID	2												64				Operational	
YURYA																				
Site A (2)	59-10N 49-32E	IIA	2															61	Operational	
Site B (1)	59-09N 49-40E	IIA	2															61	Operational	
Site C (3)	59-13N 49-25E	IIB	2												62				Operational	
Site D (4)	59-16N 49-23E	IIB	2													62			Operational	
Site E (5)	59-23N 49-17E	IIIA	3															62	Operational	
Site F (7)	59-21N 49-14E	IIB	2												63				Operational	
Site G (6)	59-04N 49-51E	IIIA	3												64				Operational	
Site H (8)	59-11N 49-47E	IID	2															63	Operational	
Site I (11)	59-21N 49-25E	IID	2												64				Operational	
Site J (9)	59-06N 49-45E	IID	2												64				Operational	
Site K (10)	59-13N 49-15E	IIIA	3															64	Operational	
ZHANGIZ-TOBE																				
Site A (1)	49-12N 81-00E	III (Single)	1													65			U/C	
Site B (2)	49-16N 80-59E	III (Single)	1														65		U/C	
Site C (3)	49-11N 80-54E	III (Single)	1														65		U/C	
Site D (4)	49-10N 81-04E	III (Single)	1															65	U/C	
Site E (5)	49-06N 81-03E	III (Single)	1															65	U/C	
Total Deployed			134	150	121															

25X1

TABLE 2. (Continued)

Location*	BE Number	Coordinates	Type of Site	Number of Launchers		Site Negated		First Coverage		Latest Coverage		Stage of Const on Last Usable Coverage			Estimated Quarter Site Operational				Estimated Status
				Soft	Har	Date	Msn	Date	Msn	Date	Msn	Date	Msn	Const	1st	2nd	3rd	4th	
TYURATAM																			
Complex A1 (1)		45-55N 63-21E	I	1															Operational
A2		45-55N 63-21E	I	1															Operational
A3 (15)		45-54N 63-20E	III (Single)		1														U/C
Complex B1 (2)		46-00N 63-34E	IA Prototype	1															Operational
B2 (16)		45-59N 63-33E	III (Single)		1														U/C
B3 (17)		46-00N 63-34E	II (Single)	1															U/C
Complex C1 (3)		45-48N 63-39E	II Prototype	1															Operational
C2		45-48N 63-39E	II	1															Operational
C3		45-48N 63-39E	II	1															Operational
Complex D1 (4)		45-59N 63-57E	IIIA Prototype		3														Operational
D2 (9)		45-59N 63-57E	III		3														Operational
Complex E1 (6)		45-58N 63-12E	IIC Prototype	1															Operational
E2		45-48N 63-12E	IIC	1															Operational
E3		45-48N 63-12E	IIC	1															Operational
Complex F (5)		46-02N 63-06E	IIIB Prototype		3														Operational
Complex G1/G2 (7)		46-03N 62-56E	I	2															Operational
G3/G4 (11)		46-03N 62-56E	I	2															Operational
G5/G6 (12)		46-03N 62-54E	II	2															Operational
G7 (18)		46-04N 62-56E	III (Single)		1														U/C
G8/G9 (19)		46-04N 62-57E	III		2														U/C
Complex H (8)		45-59N 63-42E	I	2															Operational
Complex I (14)		45-56N 63-26E	III (Single)		1														U/C
Complex J		45-54N 63-46E	Undet																U/C
Complex K (13)		46-02N 63-03E	III		2														U/C
Total				18	17														

*TDI site designators are indicated in parentheses.

1/ 7 confirmed, three probable (see text, page 7)

2/ See text, page 9.

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TABLE 3. SUMMARY EVALUATION OF SOVIET IRBM DEPLOYMENT

LOCATION*	BE NUMBER	COORDINATES	TYPE	NO OF PADS/ LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
AKTYUBINSK Launch Complex PETROVSKIY		50-00-30N 56-58-00E	IV	3		Complete
BELOMORSK Launch Complex RAMOYE		64-25-45N 34-18-15E	III	4		Complete
FEDOROVKA Launch Complex TRAKTOVYY		53-25-15N 62-23-00E	III	4		Complete
GELLI Launch Complex KAKASHURA		42-38-45N 47-27-00E	IV	3		Complete
GELLI		42-26-30N 47-28-30E	IV	3		Complete
PARAUL		42-47-30N 47-23-00E	IV	3		Complete
GRANOV Launch Complex GRANOV 1		48-56-15N 29-30-15E	III	4		Complete
GRANOV 2		48-50-00N 29-28-45E	IV	3		Complete
KALNIK		48-59-30N 29-21-45E	IV	3		Complete
KROLEVETS Launch Complex KROLEVETS 1		51-36-45N 33-29-30E	III	4		Complete
KROLEVETS 2		51-40-45N 33-31-15E	III	4		Complete
BEREZA		51-43-45N 33-43-45E	III	4		Complete
LEBEDIN Launch Complex LEBEDIN 1		50-33-00N 34-25-45E	III	4		Complete
LEBEDIN 2		50-35-45N 34-24-30E	III	4		Complete
LEBEDIN 2		50-38-00N 34-27-30E	III	4		Complete
NIGRANDE Launch Complex NIGRANDE		56-31-00N 22-02-15E	III	4		Complete
SKRUNDA		56-35-30N 21-49-15E	IV	3		Complete
VAINODE		56-28-30N 21-50-15E	IV	3		Complete
NOVOSYSOYEVKA Launch Complex NOVOSYSOYEVKA 1		44-11-45N 133-26-15E	III	4		Complete
NOVOSYSOYEVKA 2		44-07-15N 133-28-30E	IV	3		Complete
PERVOMAYSK Launch Complex KAMENNY MOST		47-58-00N 30-53-15E	IV	3		Complete
SEMENOVKA 1		47-58-45N 30-59-00E	IV	3		Complete
SEMENOVKA 2		47-53-30N 30-58-45E	IV	3		Complete

TABLE 3. (Continued)

LOCATION*	BE NUMBER	COORDINATES		TYPE	NO OF PADS/ LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
SARY OZEK Launch Complex		44-32-00N	77-46-15E	III	4		Complete
KARA BABAU 1		44-31-00N	77-58-45E	IV	3		Complete
KARA BABAU 2		44-30-15N	77-41-15E	IV	3		Complete
KARA BABAU 3							
SMORGON Launch Complex		54-31-45N	26-17-30E	III	4		Complete
SMORGON 1		54-26-00N	26-18-30E	IV	3		Complete
SMORGON 2		54-36-15N	26-22-30E	III	4		Complete
SMORGON 3							
TAYBOLA Launch Complex		68-28-00N	33-15-30E	IV	3		Complete
TAYBOLA 1		68-30-30N	33-23-15E	IV	3		Complete
TAYBOLA 2		68-26-00N	33-29-15E	IV	3		Undetermined
TAYBOLA 3							
ZHURAVKA Launch Complex		54-36-30N	76-39-45E	III	4		Complete
ZHURAVKA							

*TDI site designators have been adopted for IRBM launch sites.

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TABLE 4. SUMMARY EVALUATION OF SOVIET MRBM DEPLOYMENT

LOCATION*	BE NUMBER	COORDINATES	TYPE	NO OF PADS/ LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
AKHTYRKA Launch Complex						
AKHTYRKA 1		50-16-00N 34-50-15E	II	4		Complete
AKHTYRKA 2		50-22-00N 34-57-00E	II	4		Complete
ALUKSNE Launch Complex						
LEJASCIEMS 1		57-21-00N 26-44-45E	II	4		Complete
RUSKI		57-25-15N 26-50-00E	II	4		Complete
LEJASCIEMS 2		57-13-00N 26-33-30E	IV	4		Complete
ANASTASYEVKA Launch Complex						
ANASTASYEVKA 1		48-34-15N 135-37-45E	II	4		Complete
ANASTASYEVKA 2		48-35-45N 135-41-00E	II	4		Complete
BALTA Launch Complex						
BALTA 1		48-01-45N 29-34-00E	II	4		Complete
BALTA 2		48-07-00N 29-34-30E	II	4		Complete
BARANO-ORENBURGSKOYE Launch Complex						
SOFIYE ALEKSEYEVSKOYE		44-16-15N 131-22-30E	I	4		Complete
BARANO-ORENBURGSKOYE		44-19-45N 131-30-45E	I	4		Complete
BELOKOROVICHI Launch Complex						
OLEVSK 1		51-06-45N 28-03-15E	I	4		Complete
OLEVSK 2		51-10-30N 27-59-30E	I	4		Complete
RUDNYA ZLOTINSKAYA		51-03-30N 28-07-30E	IV	4		Complete
BORSHCHEV Launch Complex						
SKALA PODOLSKAYA 1		48-51-00N 26-08-30E	I	4		Complete
SKALA PODOLSKAYA 2		48-52-45N 26-03-30E	I	4		Complete
BREST Launch Complex						
BREST 1		51-48-45N 24-00-45E	II	4		Complete
BREST 2		51-51-45N 24-01-45E	II	4		Complete
BRODY Launch Complex						
BRODY 1		50-06-00N 25-12-15E	IV	4		Complete
BRODY 2		50-12-46N 25-05-00E	I	4		Complete
BERESTTECHKO		50-20-00N 25-05-30E	I	4		Complete
BYKHOV Launch Complex						
SLEDYUKI		53-41-30N 30-20-30E	II	4		Complete
DERAZHNYA Launch Complex						
DERAZHNYA 1		49-21-00N 27-26-30E	II	4		Complete
DERAZHNYA 2		49-26-15N 27-29-00E	II	4		Complete
KHMELNITSKIY		49-24-45N 27-08-45E	IV	4		Complete

TABLE 4. (Continued)

LOCATION*	BE NUMBER	COORDINATES	TYPE	NO OF PADS/ LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
DISNA Launch Complex						
DISNA		55-35-15N 28-16-00E	I	4		Complete
ZELKI		55-35-45N 28-24-30E	I	4		Complete
BORKOVICHI		55-41-45N 28-27-00E	II	4		Complete
DOLINA Launch Complex						
DOLINA 1		49-03-30N 24-03-30E	I	4		Complete
DOLINA 2		49-06-15N 24-08-30E	I	4		Complete
BOLEKHOV		49-06-45N 23-51-15E	IV	4		Complete
DROGOBYCH Launch Complex						
MEDENITSA		49-22-15N 23-45-30E	I	4		Complete
DROGOBYCH		49-25-30N 23-34-45E	I	4		Complete
STRYY		49-16-45N 23-43-00E	IV	4		Complete
DYATLOVO Launch Complex						
DYATLOVO		53-32-45N 25-16-45E	I	4		Complete
BEREZOVKA		53-35-30N 25-17-30E	I	4		Complete
ZBLYANY		53-35-45N 25-27-30E	II	4		Complete
GOMEL Launch Complex						
BORKHOV 1		52-18-30N 30-42-45E	II	4		Complete
BORKHOV 2		52-24-45N 30-39-00E	II	4		Complete
GRESK Launch Complex						
GRESK 1		53-14-15N 27-42-30E	I	4		Complete
GRESK 2		53-17-00N 27-40-45E	I	4		Complete
URECHYE		53-11-00N 27-58-30E	II	4		Complete
GROZNY Launch Complex						
SUNZHENSKOYE		43-08-15N 44-54-15E	I	4		Complete
NESTEROVSKAYA		43-11-30N 44-57-00E	I	4		Complete
ACHKHoy-MARTAN		43-10-30N 45-10-30E	IV	4		Complete
GUSEV Launch Complex						
GUSEV 1		54-41-30N 22-05-00E	I	4		Complete
GUSEV 2		54-44-00N 22-03-30E	I	4		Complete
GVARDEYSK Launch Complex						
GVARDEYSK 1		54-40-30N 21-07-30E	I	4		Complete
GVARDEYSK 2		54-45-15N 21-09-15E	I	4		Complete
JELGAVA Launch Complex						
IECAVA 1		56-35-30N 24-04-00E	II	4		Complete
IECAVA 2		56-39-45N 24-07-30E	II	4		Complete
IECAVA 3		56-33-00N 24-20-30E	IV	4		Complete

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TABLE 4. (Continued)

LOCATION*	BE NUMBER	COORDINATES	TYPE	NO OF PADS/ LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
JONAVA Launch Complex		54-57-15N 24-05-45E	II	4		Complete
KARMEJAVA		55-01-00N 24-14-15E	II	4		Complete
JONAVA						
KAMENETS-PODOLSKIY Launch Complex		48-51-15N 26-42-30E	II	4		Complete
KAMENETS-PODOLSKIY		48-55-15N 26-59-00E	II	4		Complete
DUNAYEVTSY						
KIVERTSY Launch Complex		50-53-15N 25-31-00E	I	4		Complete
KIVERTSY 1		50-56-00N 25-36-15E	I	4		Complete
KIVERTSY 2		50-58-30N 25-39-30E	II	4		Complete
TROSTYANETS						
KONKOVICHI Launch Complex		52-10-30N 28-34-45E	I	4		Complete
PETRIKOV		52-15-30N 28-37-45E	I	4		Complete
KONKOVICHI						
KOROSTEN Launch Complex		50-51-45N 28-18-15E	II	4		Complete
KOROSTEN 1		50-52-15N 28-31-00E	II	4		Complete
KOROSTEN 2						
KOZHANOVICHI Launch Complex		52-10-15N 27-51-30E	I	4		Complete
KOZHANOVICHI 1		52-11-30N 27-48-00E	I	4		Complete
KOZHANOVICHI 2						
KRASKINO Launch Complex		42-44-00N 130-40-15E	II	4		Complete
KRASKINO						
KRASNOZNAMENSK Launch Complex		55-01-30N 22-23-00E	I	4		Complete
VIESVILLE		55-01-15N 22-11-15E	I	4		Complete
RAGNIT						
KREMOVO Launch Complex		44-01-24N 132-20-39E	I	4		Complete
KREMOVO		44-02-30N 132-26-26E	I	4		Complete
LYALICHI						
KURGANCHA Launch Complex		39-37-45N 65-57-30E	I	4		Complete
KURGANCHA 1		39-37-30N 65-57-00E	I	4		Complete
KURGANCHA 2		39-35-15N 65-42-45E	IV	4		Complete
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TABLE 4. (Continued)

LOCATION*	BE NUMBER	COORDINATES	TYPE	NO OF PADS/ LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
LIDA Launch Complex						
LIDA 1		53-47-30N 25-20-30E	I	4		Complete
LIDA 2		53-57-15N 25-27-45E	I	4		Complete
LUTSK Launch Complex						
LUTSK 1		50-46-45N 25-03-00E	I	4		Complete
LUTSK 2		50-50-30N 25-04-15E	I	4		Complete
VLADIMIR-VOLYNSKIY		50-48-30N 24-42-30E	IV	4		Complete
MARINA GORKA Launch Complex						
MARINA GORKA		53-26-30N 27-45-30E	II	4		Complete
MAYKOP Launch Complex						
KURDZHIPSKAYA		44-31-45N 40-00-45E	II	4		Complete
SHIRVANSKAYA		44-25-30N 39-54-00E	IV	4		Complete
MOLOSKOVITSY Launch Complex						
MOLOSKOVITSY 1		59-28-45N 29-06-00E	II	4		Complete
MOLOSKOVITSY 2		59-29-30N 29-12-15E	II	4		Complete
GURLEVO		59-25-00N 28-53-15E	IV	4		Complete
MUKACHEVO Launch Complex						
MUKACHEVO 1		48-18-45N 22-30-45E	I	4		Complete
MUKACHEVO 2		48-19-30N 22-37-15E	I	4		Complete
NADVORNAYA Launch Complex						
PARYSHCHE		48-37-45N 24-42-00E	I	4		Complete
NOVA VES		48-39-30N 24-48-15E	I	4		Complete
OTYNYA		48-47-30N 24-50-30E	IV	4		Complete
OSTROG Launch Complex						
OSTROG 1		50-14-00N 26-43-15E	I	4		Complete
OSTROG 2		50-17-15N 26-41-00E	I	4		Complete
OSTROV Launch Complex						
ASANOVSHCHINA		57-31-45N 28-12-15E	I	4		Complete
SHEVELEVO		57-37-00N 28-12-15E	I	4		Complete
REDKINO		57-24-30N 28-26-00E	IV	4		Complete
PAPLAKA Launch Complex						
PAPLAKA 1		56-24-00N 21-17-30E	I	4		Complete
PAPLAKA 2		56-25-00N 21-16-45E	I	4		Complete
PINSK Launch Complex						
IVANOVO		52-10-45N 25-41-15E	I	4		Complete
MOTOL		52-12-30N 25-44-30E	I	4		Complete

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TABLE 4. (Continued)

LOCATION*	BE NUMBER	COORDINATES	TYPE	NO OF PADS/ LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
POLOTSK Launch Complex						
POLOTSK 1		55-22-30N 28-44-30E	II	4		Complete
POLOTSK 2		55-24-15N 28-33-45E	II	4		Complete
POSTAVY Launch Complex						
POSTAVY 1		55-09-45N 26-53-45E	II	4		Complete
KOZYANY		55-20-30N 26-51-30E	II	4		Complete
POSTAVY 2		55-06-15N 27-00-15E	IV	4		Complete
PRUZHANY Launch Complex						
PRUZHANY 1		52-30-30N 24-08-45E	II	4		Complete
PRUZHANY 2		52-33-30N 24-06-15E	II	4		Complete
RAKVERE Launch Complex						
SIMUNA		59-08-45N 26-26-45E	II	4		Complete
VAIKE MAARJA		59-11-15N 26-20-45E	II	4		Complete
RISTI Launch Complex						
RISTI 1		59-04-00N 24-04-30E	I	4		Complete
RISTI 2		59-07-45N 24-06-45E	I	4		Complete
ROZHDESTVENKA Launch Complex						
ROZHDESTVENKA		45-47-15N 133-43-30E	II	4		Complete
RUZHANY Launch Complex						
KRUPA 1		52-47-45N 24-42-30E	II	4		Complete
KRUPA 2		52-49-15N 24-45-30E	II	4		Complete
SATEIKIAI Launch Complex						
SALANTAI 1		55-59-45N 21-38-15E	I	4		Complete
SALANTAI 2		56-02-15N 21-41-30E	I	4		Complete
ZEMAIU KALVARIJA		56-01-45N 21-34-30E	IV	4		Complete
SIMFEROPOL Launch Complex						
MAZANKA		44-53-45N 34-20-00E	I	4		Complete
VALKI		44-57-00N 34-26-00E	I	4		Complete
SLONIM Launch Complex						
BYTEN 1		52-52-30N 25-21-30E	I	4		Complete
BYTEN 2		52-55-45N 25-22-15E	I	4		Complete
SOKAL Launch Complex						
SOKAL 1		50-22-45N 24-18-15E	I	4		Complete
SOKAL 2		50-27-15N 24-20-00E	I	4		Complete
SOKAL 3		50-20-15N 24-26-15E	IV	4		Complete

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TABLE 4. (Continued)

LOCATION*	BE NUMBER	COORDINATES	TYPE	NO OF PADS/ LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
SOVETSK Launch Complex						
SLAVSK 1		54-59-15N 21-36-30E	I	4		Complete
SLAVSK 2		54-59-45N 21-28-30E	I	4		Complete
SUCHAN Launch Complex						
NOVITSKOYE		43-01-45N 133-17-00E	I	4		Complete
SEVERNYY SUCHAN		43-10-00N 133-20-05E	I	4		Complete
TAURAGE Launch Complex						
TAURAGE 1		55-10-15N 22-20-30E	I	4		Complete
TAURAGE 3		55-05-00N 22-20-00E	I	4		Complete
TORVA Launch Complex						
TORVA 1		57-56-00N 26-04-00E	I	4		Complete
TORVA 2		57-59-15N 26-05-00E	I	4		Complete
TSIRGULINA		57-49-45N 26-12-30E	IV	4		Complete
UGOLNYY Launch Complex						
UGOLNYY		64-47-32N 177-56-15E	II	4		Complete
UKMERGE Launch Complex						
VEPRIAI		55-07-45N 24-38-30E	I	4		Complete
UKMERGE		55-11-00N 24-43-30E	I	4		Complete
UMAN Launch Complex						
MOLODETSKOYE		48-53-45N 30-27-45E	I	4		Complete
MANKOVKA		48-57-45N 30-23-45E	I	4		Complete
KISHENTSY		49-00-15N 30-13-45E	IV	4		Complete
USOVO Launch Complex						
OVRUCH 1		51-17-15N 28-16-15E	I	4		Complete
OVRUCH 2		51-18-30N 28-10-30E	I	4		Complete
LIPNIKI		51-12-15N 28-26-30E	II	4		Complete
UZHGOROD Launch Complex						
UZHGOROD		48-33-30N 22-13-15E	II	4		Complete
VORU Launch Complex						
VORU 1		57-46-00N 26-47-15E	II	4		Complete
VORU 2		57-49-00N 26-50-30E	II	4		Complete
VSELYUB Launch Complex						
VSELYUB 1		53-45-45N 25-43-00E	I	4		Complete
VSELYUB 2		53-48-00N 25-46-45E	I	4		Complete
YELSK Launch Complex						
YELSK 1		51-42-30N 29-12-30E	I	4		Complete
YELSK 2		51-47-15N 29-18-15E	I	4		Complete

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TABLE 4. (Continued)

LOCATION*	BE NUMBER	COORDINATES	TYPE	NO OF PADS/ LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
ZAGARE Launch Complex						
ZAGARE 1		56-23-15N 23-19-15E	I	4		Complete
ZAGARE 2		56-29-00N 23-20-45E	I	4		Complete
LIELELEJA		56-24-30N 23-36-45E	IV	4		Complete
ZHITOMIR Launch Complex						
ZHITOMIR 1		50-04-45N 28-15-45E	II	4		Complete
ZHITOMIR 2		50-10-00N 28-16-15E	II	4		Complete
BERDICHEV		50-05-30N 28-22-00E	II	4		Complete
ZHMERINKA Launch Complex						
GNIVAN		49-09-00N 28-11-45E	II	4		Complete
ZHMERINKA		49-10-15N 28-05-00E	II	4		Complete
VINNITSA		49-17-30N 28-20-15E	IV	4		Complete
ZNAMENSK Launch Complex						
ZNAMENSK 1		54-32-45N 21-11-15E	I	4		Complete
ZNAMENSK 2		54-35-15N 21-07-30E	I	4		Complete

*TDI site designators have been adopted for MRBM launch sites.

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TABLE 5. SUMMARY EVALUATION OF SOVIET FIXED FIELD SITES (SSM FIXED FIELD POSITIONS)

LOCATION*	BE NUMBER	COORDINATES	NEGATION DATE	FIRST OBSERVED	NO OF LAUNCH POSITIONS
ALUKSNE Lejasciems		57-15-15N 26-41-15E			4
ANASTASYEVKA Anastasyevka		48-32-15N 135-31-45E			4
BELOKOROVICHI Rudnya Zlotinskaya		51-08-30N 27-59-45E			4
BREST Pishcha		51-35-15N 23-46-45E			4
Zamshany		51-50-05N 24-02-05E			4
BRODY Yazlovchik		50-05-45N 25-02-00E			4
Stanislavchik		50-07-00N 24-56-30E			4
DERAZHNYA Khmelnitskiy		49-25-00N 27-06-30E			2
Letichev 1		49-22-45N 27-43-45E			4
Letichev 2		49-25-15N 27-45-00E			2
DISNA Dernovichi		55-47-45N 28-20-00E			4
DOLINA Borezhnitsa		49-12-45N 23-57-30E			4
Rukuv		48-58-21N 24-05-35E			4
DYATLOVO Ruda		53-23-15N 25-10-30E			4
Yavorskaya 1		53-23-15N 25-12-45E			5
Ruda		53-23-15N 25-13-30E			4
Yavorskaya 2					
Ruda					
Yavorskaya 3					
GOMEL Gomel		52-20-45N 30-51-30E			4
GUSEV Tolminkemsk		54-22-15N 22-20-15E			4
GVARDEYSK Geroysskoye		54-45-45N 21-25-15E			2
Vysokoye		54-44-30N 21-33-45E			4

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TABLE 5. (Continued)

LOCATION*	BE NUMBER	COORDINATES	NEGATION DATE	FIRST OBSERVED	NO OF LAUNCH POSITIONS
JELGAVA					
Jelgava 1		56-38-45N 23-52-45E			2
Jelgava 2		56-44-15N 23-55-15E			4
JONAVA					
Kaisiadorys		54-59-30N 24-29-00E			4
KAMENETS-PODOLSKIY					
Yarmolintsy		49-12-00N 26-46-45E			4
KIVERTSY					
Kivertsy		50-50-00N 25-25-00E			4
KONKOVICHI					
Novoselki 1		52-23-00N 28-42-45E			4
Novoselki 2		52-25-45N 28-41-00E			4
KOROSTEN					
Litki 1		51-01-30N 28-27-45E			4
Yemilchino 1		50-52-30N 27-53-00E			4
Yemilchino 2		50-52-00N 27-53-00E			4
Litki 2		51-01-15N 28-24-15E			2
KRASNOZNAMENSK					
Krasnoznamensk		54-57-30N 22-35-00E			4
Sudargas		55-00-30N 22-35-00E			4
KREMOVO					
Manzovka		44-12-00N 132-34-00E			4
LIDA					
Vasilishki		53-44-00N 24-56-15E			4
LUTSK					
Gorokhov		50-35-45N 24-48-45E			4
MARINA GORKA					
Shotsk		53-27-45N 27-48-00E			4
MAYKOP					
Tul'skaya		49-31-15N 40-14-15E			4
Maykop		44-32-30N 39-57-45E			4
NADVORNAYA					
Ivanovtsy		48-38-00N 24-54-15E			4

TABLE 5. (Continued)

LOCATION*	BE NUMBER	COORDINATES		NEGATION DATE	FIRST OBSERVED	NO OF LAUNCH POSITIONS
OSTROG Slavuta Shepetovka		50-16-45N	26-57-45E			2
		50-12-30N	26-59-00E			4
OSTROV Shabany		57-23-45N	28-13-15E			4
PINSK Lychkovtsy		52-15-00N	25-21-45E			4
POLOTSK Plissa 1		55-12-30N	28-01-45E			3
Plissa 2		55-11-30N	27-54-45E			4
POSTAVY Sivtsy		55-09-30N	26-53-45E			1
Bogatoye		54-57-15N	26-28-45E			4
Kobylnik		54-56-30N	26-37-15E			4
PRUZHANY Strigovo		53-23-15N	24-14-30E			4
Shcherby		52-23-00N	24-10-00E			4
RUZHANY Shehitno 1		52-43-15N	24-58-15E			4
Shehitno 2		52-41-00N	24-57-30E			4
SATEIKIAI Telsiai		55-56-45N	22-07-00E			4
Alsodziai		56-00-15N	22-06-00E			4
SLONIM Byten		52-54-30N	25-22-00E			2
SMORGON Smorgon		54-34-45N	26-21-30E			2
TAURAGE Skavdville		55-23-00N	22-31-00E			4
Taurage		55-10-00N	22-14-30E			2
TORVA Valga		57-50-15N	25-54-15E			4

TABLE 5. (Continued)

LOCATION*	BE NUMBER	COORDINATES	NEGATION DATE	FIRST OBSERVED	NO OF LAUNCH POSITIONS
UKMERGE Gelvonai Balninkai		55-07-15N 24-43-45E 55-13-00N 25-02-00E			4 4
USOVO Luginy		51-06-00N 28-23-00E			4
YELSK Yelsk		51-50-45N 29-05-15E			4
ZAGARE Dobele 1 Dobele 2		56-40-00N 23-11-45E 56-40-45N 23-06-45E			4 4
ZHITOMIR Berdichev		49-51-30N 28-25-30E			2
ZHMERINKA Vinnitsa Bar		49-13-15N 28-18-45E 49-05-30N 27-43-00E			4 4
ZNAMENSK Pravdinsk Domnovo		54-23-00N 20-59-45E 54-25-30N 20-53-00E			3 4

*TDI site designators have been adopted for the fixed field sites, which are listed under the nearest permanent IRBM/MRBM complex.

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TABLE 6. COMPOSITION OF IRBM/MRBM COMPLEXES

No of Complexes	Containing Soft Sites Only				Containing Hard Sites Only			Containing Hard and Soft Sites		
	One Site, No Housing or Support Facility	One Site	Two Sites	Three Sites	One Site	Two Sites	Three Sites	Two Soft One Hard Site	One Soft One Hard Site	One Soft Two Hard Sites
IRBM	3			2				1	1	3
MRBM	5	1	36	6				20	1	
TOTALS	8	1	36	8	1	0	3	21	2	3

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